DET NORSKE VERITAS

Proposal for:
Climate Technology Centre and Network

United Nations Framework Convention on Climate Change

DNV Reg. No.: 1-42H8GD-SRMNO470-3
2012-03-13


DNV

Proposal title: Climate Technology Centre and Network		DNV AS P.O.Box 300 1322 Høvik, Norway Tel: +47 67 57 99 00 Fax: +47 67 57 99 11 http://www.dnv.com Org. No:
Customer:	United Nations Framework Convention on Climate Change	
Customer Address:	P. O. Box 260 124 53153 BONN Germany	
Customer Reference:		
Contact Person:		
DNV Legal Entity:	Det Norske Veritas AS (DNV)	
DNV Reference:		
Date of Issue:	2012-03-13	
Validity of Proposal:	Throughout 2012 or until decision is made by the Conferences of the Parties.	
Terms and Conditions:		
Prepared by/Contact Person: *Anett H. Valsvik* *Mark C. Trexler*	*Position:* *Principal Consultant* *Director*	*Signature:*
Approved by: *Bjørn K. Haugland*	*Position:* *Chief Technology and Sustainability Officer*	*Signature:*

This proposal is business sensitive to DNV and is being transmitted as confidential. Only the Executive Summary may be disclosed on the UNFCCC website.


DNV

Table of Contents

1 EXECUTIVE SUMMARY

A successful response to climate change, addressing its physical, economic, and technical challenges, will require coordinated efforts on many fronts. Any such response must rely on a broad and deep technology foundation. The proposed Climate Technology Centre & Network is a timely initiative in advancing the key goal of technology development and deployment in developing countries. Many different approaches and initiatives have been tried or are currently underway to promote the technologies that will be needed to bring about a low-carbon world, and to adapt to a changing world. The Climate Technology Centre & Network, with a focused mission and innovative business strategy, can play a key role in moving the world in the needed direction. Det Norske Veritas (DNV) is proud to submit this proposal to host the Climate Technology Center & Network.

DNV is an independent foundation operating globally. Its purpose is to safeguard life, property and the environment, and its vision is of "global impact for a safe and sustainable future." Headquartered in Oslo, Norway, DNV has worked internationally since it was established in 1867 and now has approximately 300 offices in 100 countries. As a knowledge-based company, DNV's prime assets are the creativity, knowledge and expertise of more than 10,000 employees from more than 85 different nations.

DNV is an international technology and knowledge management company. One of DNV's most important competitive advantages is its continuous investment in and dedication to research, innovation and collaboration with industry partners. DNV has had a research department since 1954 that has enhanced and developed services, rules and industry standards in multiple fields. Many of the technology solutions developed by DNV have helped define internationally recognized standards. DNV is also a globally recognised leader in knowledge management tools and services.

DNV specialises in identifying, assessing and advising on risk. DNV's risk management expertise helps a broad range of global industries, from Energy and Maritime to Healthcare and Food. DNV has also worked with the UNFCCC for many years as a Designated Operational Entity (DOE) and a leading validator and verifier of CDM projects.

DNV has the ideal mix of capabilities and experience to host the Climate Technology Centre and its Network efficiently and effectively, and to launch it quickly. DNV has experience in designing and implementing technology centres and managing extensive networks. With its independent governance structure, wide-ranging and deep technical and operational expertise, DNV offers a unique approach to building trust and managing networks from an experienced and neutral standpoint.

DNV's vision for the Climate Technology Centre and Network is as an efficient, effective and responsive branch of the Technology Mechanism. The importance of developing and deploying technology for climate change mitigation and adaptation in developing countries has been recognised through a variety of international technology initiatives launched over the years. It is crucial that the Climate Technology Centre and Network leverage the long and on-going process of developing and deploying such technologies. It must cooperate and collaborate with existing initiatives leveraging existing knowledge and experience, rather than duplicating on-going efforts. Resources must be used

efficiently and effectively. To accomplish this, the Climate Technology Centre and Network must be structured around several core principles:

- A quick-start approach that generates "quick wins" that are needed to build user and funder support.
- A focused "knowledge management" approach to executing the mission.
- A highly focused and phased approach to its objectives.
- A procedurally rigorous approach to quickly and effectively managing numerous technology-related requests.
- An independent and transparent approach to managing the many and varied interest groups.

The implementation of these principles is further elaborated below and in the main proposal.

Advancing the mission of the Climate Technology Centre and Network will require a multifaceted, adaptive and efficient organisation capable of managing large information flows. Efforts by developing countries to mitigate climate change, or adapt to its impacts will rely on a broad and deep technology foundation which also recognises the inter-linkages between climate change and societal concerns such as endemic poverty, food supply and public health. It will also require the ability to access and manage information, knowledge and know-how. DNV will make use of its in-house technology expertise and advanced knowledge management techniques to build a strong and dynamic Climate Technology Centre and Network.

DNV will build a Climate Technology Centre and Network that creates trust and confidence among its stakeholder and is broad ranging and inclusive. Enhanced action on the development and transfer of technologies requires recognising the importance of public-private partnerships and the necessity for inclusion of all stakeholders. The DNV Network, which is global in nature and cuts across a wide variety of industries and sectors, will be used as a starting point for building the Climate Technology Centre's Network. Utilizing DNV's extensive global network of in-country offices, DNV will be able to further develop an inclusive Network that covers a broad range of actors from regional and national financial institutions to regional and local organisations focusing on those most vulnerable to the impacts of climate change. Outreach at the international level will also be a key focus of the Director and senior staff in order to ensure cooperation and collaboration between programmes.

A phased approach with ambitious milestones will be an important factor in the long term success of the Climate Technology Centre and Network. In order to establish the Climate Technology Centre and Network in a quick and efficient manner, DNV recommends adopting a management plan with a four-phased approach, and a scope of work that expands over time. Once short-listed, DNV will commence the first phase, including a global search to recruit a highly qualified candidate to lead the Climate Technology Centre and Network. DNV will also secure a core group of interim staff from within DNV to enable the rapid start-up of the Climate Technology Centre and Network. In phase 2, the Climate Technology Centre and Network will be launched and focus on staffing, modalities and procedures, and the structuring of the Network and knowledge management systems. In the third phase, requests for assistance from developing country Parties will be accepted based on the agreed scope of work and in accordance with modalities and procedures established under phase 2. By the second year of operation, the Climate Technology Centre and Network's scope of work should expand (phase 4).

Regional hubs are a necessary element of the Climate Technology Centre and Network. Ideally, regional hubs would be in place from the beginning of Climate Technology Centre operations, but the ability to support regional hubs will be based on available resources. DNV will, however, make use of its regional offices to support the work of the core Climate Technology Centre staff as needed. DNV has identified four countries where regional hubs could most significantly advance CTC&N objectives: Brazil, India, China, and South Africa. All four hubs can be established using existing DNV infrastructure.

A focused knowledge management approach is a core component of DNV's proposal. DNV's proposed Knowledge Management System will house information on products, services, and partners in the Network, and serve as a technology clearing-house. Managing and accurately utilising the vast amounts of knowledge relevant to technology transfer and diffusion issues will be important to avoid duplication of efforts and to effectively advance the goals of the Climate Technology Centre and Network. The Knowledge Management System will ensure the ability of the Climate Technology Centre to respond efficiently to requests using its Network as well as numerous sources of information relevant to the development of climate mitigation and adaptation technologies. State of the art tools and techniques will be applied to increase the usability of available knowledge, and social interaction systems will help facilitate the interface between support requesters and knowledge providers.

Sharing knowledge is a key driver of progress; therefore capacity building is an important function of the Climate Technology Centre and Network. Capacity building activities will need to be tailored to different national circumstances, sectors and technologies. They will need to be interactive, draw from lessons learned and best practices, and be available in formats that are easy to access and understand. DNV has extensive experience in training and capacity building from existing academies and technology centres. DNV's experience as an educator and manager of knowledge will ensure that capacity building activities are targeted and appropriate.

DNV's approach to the establishment of the CTC&N is based on a thorough understanding of how technologies are developed and how they can best be implemented to provide for a safe and sustainable future from both local and global perspectives. DNV's capabilities underpinning this proposal are core competencies in areas such as mitigation and adaptation technologies, technology qualification, and knowledge management. DNV deploys its expertise in many different ways, including feasibility studies, safety risk assessments, environmental impact assessments, reliability studies, technical verifications, asset management, project risk management and capacity building. . DNV, as a host organisation, has extensive technical expertise that will support the success of the Climate Technology Centre and Network, e.g. small and large scale renewable energy solutions, electric transmission and distribution systems, and energy efficient technologies

As an independent foundation, DNV is technology neutral and uniquely placed as an interface between technology providers, research and university organizations, and other governmental and non-governmental entities. It has the independence required to develop a high degree of trust between stakeholders that will encourage openness, communication and the sharing of best practices. The approach presented in this proposal draws on DNV's expertise and experience and will ensure that the

Climate Technology Centre and Network will be at the forefront of efforts to enhance the development and transfer of technologies to developing countries.

2 INTRODUCTION

2.1 General Comments to the Call for Proposal (CFP)

As stated in the CFP, the mission of the Climate Technology Centre and Network (CTC&N) is to "stimulate technology cooperation and to enhance the development and transfer of technologies and to assist developing country Parties at their request, consistent with their respective capabilities and national circumstances and priorities, in order to build or strengthen their capacity to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations to support action on mitigation and adaptation and enhance low emissions and climate-resilient development."

The mission of the CTC&N is broad ranging, as are the possible priority areas listed in Decision 1/CP.16, paragraph 120. In order to fulfil the mission, while taking into consideration the priority areas of the Technical Mechanism, as defined by the Conference of the Parties, the CTC&N will need to have clear modalities and operational procedures as well as open lines of communication with the various bodies under the Technology Mechanism. Further definition and guidance will also need to be produced by the Parties or elements of the UNFCCC architecture to ensure that the functions and responsibilities of the CTC&N are not duplicated or complicated by other yet to be detailed modalities and procedures (for example modalities for interfacing with the Adaptation Committee and the Financial Mechanism). The CTC&N should function as an integral element of the UNFCCC architecture, rather than as an outlier, regardless of where it is hosted.

The Management Plan and timeline developed by DNV recognize the gaps that will need to be filled in prior to the CTC&N becoming operational. Operational procedures developed by a DNV CTC&N will ensure flexibility in its structure and functions in order to incorporate changes or refinements that are likely to be made by the Parties over the coming years. Innovation and the ability to adapt to changing business and technology environments have been keys to DNVs long-term success and will also be keys to the success of the CTC&N.

DNV envisions the CTC&N as an effective, efficient and responsive branch of the UNFCCC architecture designed to provide its users with highly targeted and relevant assistance on mitigation and adaptation technologies and techniques.

This tender is structured to deliver an effective, efficient, and expeditious CTC&N that uses advanced knowledge management techniques to help quickly demonstrate its value to funders and users alike. This will in turn facilitate the flow of additional support and resources that will allow the longer-term objectives of the CTC&N to be accomplished. This is further described in the tender's Technical Approach (Section 3).

2.2 DNV in Brief

Established as an independent foundation in 1864, DNV is internationally recognised as a provider of technical, advisory, and management consulting services, and as one of the world's leading classification and certification societies. DNV's vision of a "global impact for a safe and sustainable future" fits its status as an independent foundation, and guides its work as a global services provider.

With more than 10,000 employees in some 300 offices around the world, DNV's core overarching mission is managing risk. DNV's culture is one of continuous improvement in risk management as it applies to the design and construction of maritime and energy infrastructure, to the delivery of healthcare and food safety services, to bio risk and information technology risk management, and to the development of regulatory policies and standards, all with the goal of helping society and businesses succeed in a world full of surprises.

DNV Group based in Oslo includes three global business units:

- DNV Maritime and Off-Shore Energy (based in Oslo, Norway)
- DNV Business Assurance (based in Milan, Italy)
- DNV KEMA Energy & Sustainability (based in Arnhem, The Netherlands)

DNV is a truly global company. In addition to its large presence in Europe and the United States, thousands of DNV staff are located in developing countries, where DNV has a very long history:

- DNV began working in China more than 100 years ago (1888), and today has more than 1,000 staff in China working in areas such as ship building, climate change, and health care.
- DNV began working in India more than 50 years ago, and today has more than 400 staff working in areas such as management certification and climate change.
- DNV established its Brazilian subsidiary more than 40 years ago and today has almost 300 staff working in areas such as off-shore energy and climate change.

One of DNVs most important competitive advantages is its continuous investment and dedicated focus on research, innovation and collaboration with industry. Since 1954 DNV has had a Research and Innovation department (R&I) that has enhanced and developed services, rules and industry standards in multiple fields. Many of the technology solutions developed by DNV have helped define internationally recognized engineering, safety, and environmental standards. DNV's **Technology Outlook 2020** report released last year (enclosed with this tender), presents DNV's most recent vision of the need for and direction of technology innovation.

DNV is intimately familiar with the development and implementation of today's climate policy regime under the United Nations Framework Convention on Climate Change. Since early in the 1990s DNV has established a leading international position in the climate change market, especially for accredited certification services towards reducing greenhouse gas (GHG) emissions. Focus has been on corporate or site/installation verifications under various Emission Trading Schemes (ETS); on validation, verification and certification of CDM and JI projects (Kyoto protocol mechanisms); on verification of sector/national GHG emission inventories; as well as on risk assessment and management. Today DNV has a world market share of about 50% for CDM and JI projects (more than 70% for CDM projects in China) and a leading role in verifying ETS projects in various schemes. DNV has more than 150 climate change and knowledge management specialists working in more than 20 offices around the world

Beyond the CDM, DNV has done extensive work in preparing for a low-carbon economy, including our Clean Technology Centre in Singapore, our Sustainability Centre in Beijing, our leading work on carbon capture and storage, our development of CO2 recycling technologies, our forecasting of carbon markets at the regional and global levels, and our wide ranging knowledge of mitigation and adaptation technologies.

3 TECHNICAL APPROACH

Technology transfer, as defined by the Intergovernmental Panel on Climate Change, encompasses "a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations (NGOs) and research/education institutions.[1]" Transferring technologies can entail a wide range of activities with wide ranging benefits from more reliable access to electricity, to education and workforce improvement, and improved health or natural resource management.

As the operational arm of the Technology Mechanism under the UNFCCC, the CTC&N will need to be a multifaceted, adaptive, and efficient organisation if it is to meet the expectations of the stakeholders involved. Managing and accurately utilising and building upon existing experience and knowledge, having a deep understanding of how technologies are developed, and knowing how they can best be implemented to provide for a safe and sustainable future from both local and global perspectives, will be important facets of what the CTC&N is and does.

Technology development is an on-going and evolving process, with an almost infinite amount of associated information in many distinct locations. DNV, for example, was involved in the development of what is now CleanTech.org, which operates a collaborative networking platform on www.Cleantech.org, involving over 35,000 global members across more than 50 countries through a series of managed collaborative networks. This is just one of many existing networks relevant to the work of the CTC that it will be important to draw into the CTC&N's own activities in one manner or another. The difficult in accessing information from a broad range of sources and stakeholders can lead to duplications of effort, as well as to decisions that may not be informed by the full body of knowledge that already exists. This has long been a fundamental problem facing the developing country users of initiatives such as the CTC&N, and it makes innovative knowledge management an absolute core component of a successful CTC&N.

A successful response to climate change, addressing its physical, economic, and technical challenges, will require coordinated efforts on many fronts. With a great deal of work already underway, and limited resources for new programs like the CTC&N, it will be important to leverage learning from the successes and failures of other efforts. Coordinating a knowledge network that utilizes and disseminates lessons learned and best practices across the arenas of policy, mitigation, development, and adaptation will require the knowledge management expertise of a team with global breadth and pre-existing expertise. DNV has the breadth and depth of experience and knowledge, as well as the ability to reach stakeholders across sectors and geographic boundaries, to ensure the success of the CTC&N.

DNV's approach to establishing the CTC&N is established around several principles based on DNV's legal status as an independent foundation, its long experience, and its global reach. The first principle is the need for a CTC&N quick-start that generates quick successes. By focusing on a quick and efficient start, support for the CTC&N can be built among its key stakeholders. At the same time, a procedurally rigorous and transparent operational approach must be developed and implemented to effectively manage the many requests for support that will be made to the CTC&N. Operational, organisational and governance modalities and procedures will need to reflect the priorities and objectives of the CTC&N and provide stakeholders with clarity, assurance, and transparency. In addition, a focused "knowledge

[1] Methodological and Technological Issues under Technology Transfer, SPM, © 2000, Intergovernmental Panel on Climate Change, ISBN: 92-9169-112-7

management" approach to executing the CTC&N's mission is essential. Finally, the CTC&N must be independent and neutral, while remaining responsive to the UNFCCC and its Parties, in accommodating the many interest groups that will be involved with the CTC&N's mission.

Based on these principles, DNV's technical approach is based on:

- Starting operations immediately after tender approval by the Parties;
- Utilizing a phased approach with the early demonstration of organizational successes, laying the groundwork for longer-term expansion in scope and scale;
- Leveraging DNV's already existing international brand based on integrity and independence, and a mission of promoting a "safe and sustainable future";
- Leveraging already existing expertise across thousands of DNV technical experts, including in knowledge management, giving the CTC immediate access to far broader expertise than its small full-time staff would suggest;
- Leveraging already existing DNV technical networks that span dozens of relevant climate technologies;
- Leveraging already existing DNV geographical diversity that allows the quick deployment of CTC hubs in key countries around the world.

3.1 The CTC&N in the UNFCCC: An Organisational Overview

Various documents produced by the Parties suggest to DNV the overall structure of the Technology Mechanism as depicted in Figure 1 below. It is a hierarchy in which the COP serves as the ultimate authority, with the Advisory Board functioning as its representative in providing on-going guidance and oversight to the CTC&N. The CTC will also interact with the Technical Executive Committee which has been tasked with policy guidance on the development and transfer of technology, as well as a stakeholder engagement process that is parallel to the CTC&N's role of stakeholder engagement. Many of the specifics of future interaction between the TEC and CTC&N have not yet been addressed, but it is clear given their parallel responsibilities that both organisations must work together effectively in order to ensure that the widest possible stakeholder engagement is achieved.

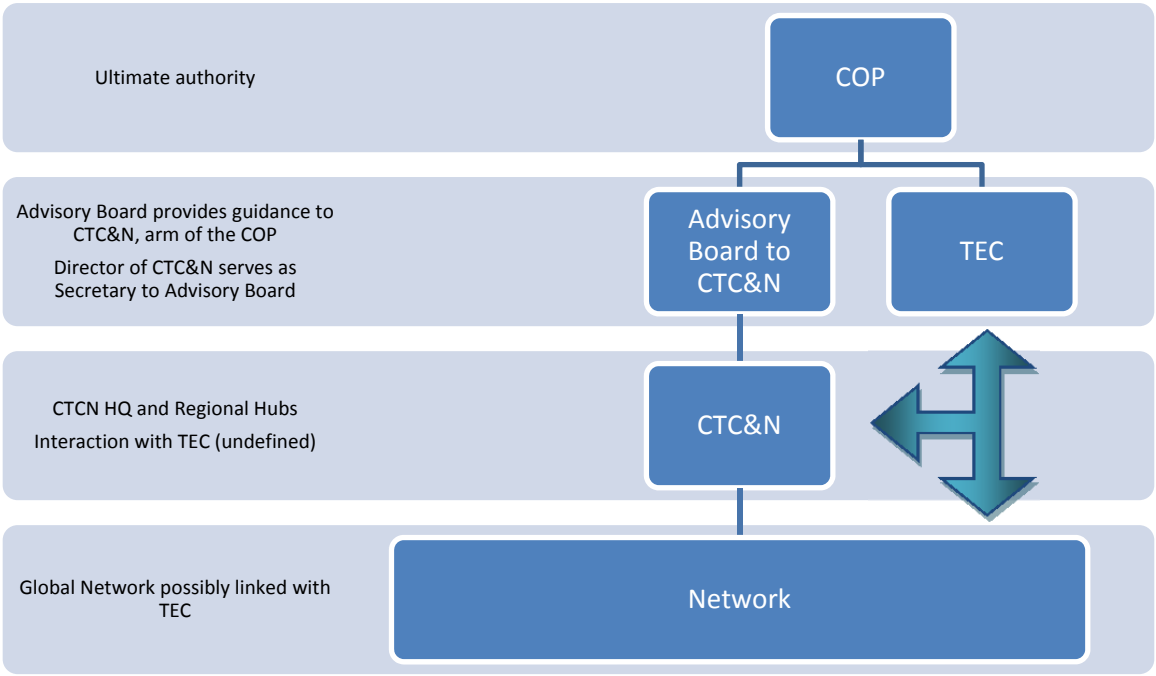


Figure 1: Placement of the CTC&N in the UNFCCC Framework

3.1.1 Organizational Structure of the CTC&N

The CTC&N's organizational structure, which is detailed in Annex 1, is designed to be responsive to users' needs while recognizing that the CTC&N will need to be lean and effective with limited resources (particularly at the outset).

The first task of DNV as host to the CTC&N will be to bring on a highly experienced and competent Director. DNV will begin the search process once it has been short-listed, with the intention of presenting the best candidate at COP-18 in order for that candidate to be endorsed by the Advisory Board. DNV has included a description of the qualifications it will seek in a Director, but given the importance of the position, DNV prefers to undertake a thorough global search in order to find the most appropriate candidate(s). DNV will work with the Advisory Board during this process to ensure UNFCCC support for the candidate. Once on board, the Director will work closely with the Advisory Board to ensure that the work plan, as set out in the Management Plan (see Section 4) is carried out in a timely manner and in accordance with guidance from the Parties.

DNV will provide interim staff selected from its highly qualified staff to help get the CTC&N quickly established. Resumes indicative of the range of expertise and talents available are provided in Annex 6. Once the CTC&N is established DNV will begin a recruiting process to bring on additional and permanent staff. Please see Management Plan (Section 4) for additional details and Annex 6 for expected staffing requirements and resumes. Among other areas, the personnel included in this section are highly qualified and experienced in a range of activities from start-up organizational management, knowledge management (including system design), mitigation and adaptation technologies, the UNFCCC process, capacity building and the development of new systems and Networks.

3.2 A Phased-in Approach to CTC&N Establishment

Given the broad mandate of the CTC&N, DNV proposes that the CTC&N be launched in a phased way. In doing so, the CTC&N will be designed to ensure long-term stability and usefulness to the Parties. It will also provide time for the necessary coordination and rules-building process that will be needed once the CTC is up and running. The Management Plan in section 4 provides greater detail on the phases and tasks envisioned as necessary elements in implementing the CTC&N.

The clear focus of the first half year will be to enable the CTC to begin accepting user support requests as quickly as possible, and to build up the CTC's Network. However, given the high probability that requests will be more abundant than resources from the very beginning, DNV recommends limiting the initial scope of requests to be acted upon. This will enable CTC staff to build the Network, put in place the necessary modalities and procedures, and enable the system to learn and adapt before the scope of requests is widened.

Once modalities and procedures and other important elements are in place, and the CTC&N can begin accepting requests, DNV recommends opening the CTC&N to requests that meet the following general criteria:

- An expected project cost (whether mitigation and/or adaption) of less than US$500,000.
- Requesting assistance with preparation of Technology Needs Assessments.
- Requests from Parties which are on this of Least Developed Countries (LDCs) and Small Island Developing States (SIDS).

All products and services provided by the CTC&N would, however, be subject to available funding.

3.2.1 Capacity Building

As a broker and manager of technology related information, capacity building will be an important function of the CTC&N. Disseminating knowledge and know-how, developing programmes targeting specific topics related to requests for assistance, ensuring information flows among stakeholders, and learning from and sharing lessons learned are all important aspects of the work the CTC&N will undertake. As can be seen from the samples provided by DNV in Annex 7, capacity building through workshops can be an appropriate tool for fulfilling requests made by Parties.

DNV understands that an important component of technology transfer is the process of learning. In developing the products and services the CTC&N will need to accomplish its mission, DNV will draw on its experience as a manager of knowledge, as an educator through its various learning academies, and as a technology researcher, to help meet the capacity building requests made of it. An important aspect of capacity building will be the ability to manage the vast amounts of knowledge relevant to the CTC&N and the Technology Mechanism in general.

3.2.2 Knowledge Management as a CTC&N Priority

DNV will make development of a knowledge management system (KM) one of the top priorities of the CTC&N during the first phase of implementation. An effective knowledge management system as described in more detail in Annex 4 will ensure the efficiency and functionality of the CTC&N. It will leverage the CTC&N's ability to respond to more requests than the level of staffing and resources would otherwise allow. It will increase the CTC&N's ability to contribute to capacity building which would otherwise be quite limited due to its small staff. Capacity building through an effective knowledge management system (including through articles, blogs, and tweets for example) can be an on-going effort that will not drain resources of the CTC&N. A knowledge management system will also provide an effective interface between limited CTC staff and the Network. Through this system, Network participants will be able to interact with the CTC and with each other. This will be important as a way to automate the network interface and learning process while ensuring CTC staff is able to effectively carry out their work.

3.3 Achieving the CTC&N's Mission through Knowledge Management

DNV has extensive experience across multiple topical areas in managing and responding to large numbers of requests for support (see Sections 5 and 6). In the case of the CTC&N, and in order to provide for future growth and the ability to move to a hub-based system, DNV will implement a "help-desk" software solution for the management of incoming support request. A number of such solutions exist that can be easily deployed for the purpose, including HelpDeskPilot, Kayako Fusion and PerlDesk.

This class of products will allow the CTC&N's staff to have access to a central knowledge base containing all of the CTC&N's historical data and requester information. In addition staff can easily search the entire knowledge base, including articles and previously closed support requests through use of keywords or phrases; and they will be able to easily view all open, closed and pending support requests. Requesters, if they so choose, will be able to seek answers to their questions without contacting a CTC&N staff member by searching the accumulating knowledge base. Requests can easily be created by designated focal points, CTC&N staff and others through a ticketing system. When creating a request ticket, the requestor is automatically prompted to fill in required essential information regarding their request to expedite the support process. Support tickets can also be automatically created from emails or during phone calls. Automated responses can be emailed to requesters as soon as a request is received. Use of this type of product will enable the CTC&N to easily track and have a focused response to the most pertinent support issues at any given time.

3.3.1 Addressing Climate Technology Needs

The combination of almost infinite sources of information relevant to the development and deployment of climate mitigation and adaptation technologies, and a pervasive inability to access this information when needed, complicates efforts of technology users, particularly in developing countries. Rather than contributing to this problem by establishing its own isolated information, the CTC&N as proposed by DNV will use the knowledge management system to gather and share information with other Networks. The general requirements of the KM system that the CTC&N will utilize are described in detail in Annex 4 to this proposal, and include:

- Ability to easily find content

- Usability of content
- Maintainability of content
- Personalization of how content is displayed
- Future-proofing of the content
- Integration of CTC with other knowledge systems
- Easy authoring of knowledge management content

3.3.2 Building the CTC&N Network, and Building Capacity

The CTC&N's knowledge management system will utilize an integrated set of software solutions, each of which will be available to different component of the CTC system and Network as illustrated in Table 1 below. See Annex 4 for additional detail.

	KM System Components and Users	CTC	Network	Advisory Board	Requestors	General Public
1	Support Request Management System	X			X	
2	Search System	X	X	X	X	
3	Social Interaction System	X	X	X	X	
4	Knowledge Capture and Dissemination System	X		X	X	X
5	Grants Management System	X	X	X	X	
6	Management Information System	X		X		

Table 1: Knowledge Management System Components and Respective Users

With respect to expanding and managing the CTC&N, and building capacity across the climate technology community, components 2 and 3 of this matrix are particularly important.

The Search System will facilitate the CTC&N's access to the universe of available information that can support climate technology development and diffusion efforts in developing countries. The Network will be able to utilize the Search System, and over time will likely be able to get many support needs fulfilled without having to directly access CTC staff. State of the art search tools and techniques can radically increase the usability of knowledge, and the willingness of knowledge consumers to use the system. Conceptual searches, for example, cluster results into meaningful groups and relations, rather than simply providing a long index of sources. A search for the term "drought resistant crops," for example, could deliver a page that meaningfully groups research papers, researchers, projects, locations and images, representatively illustrated below.

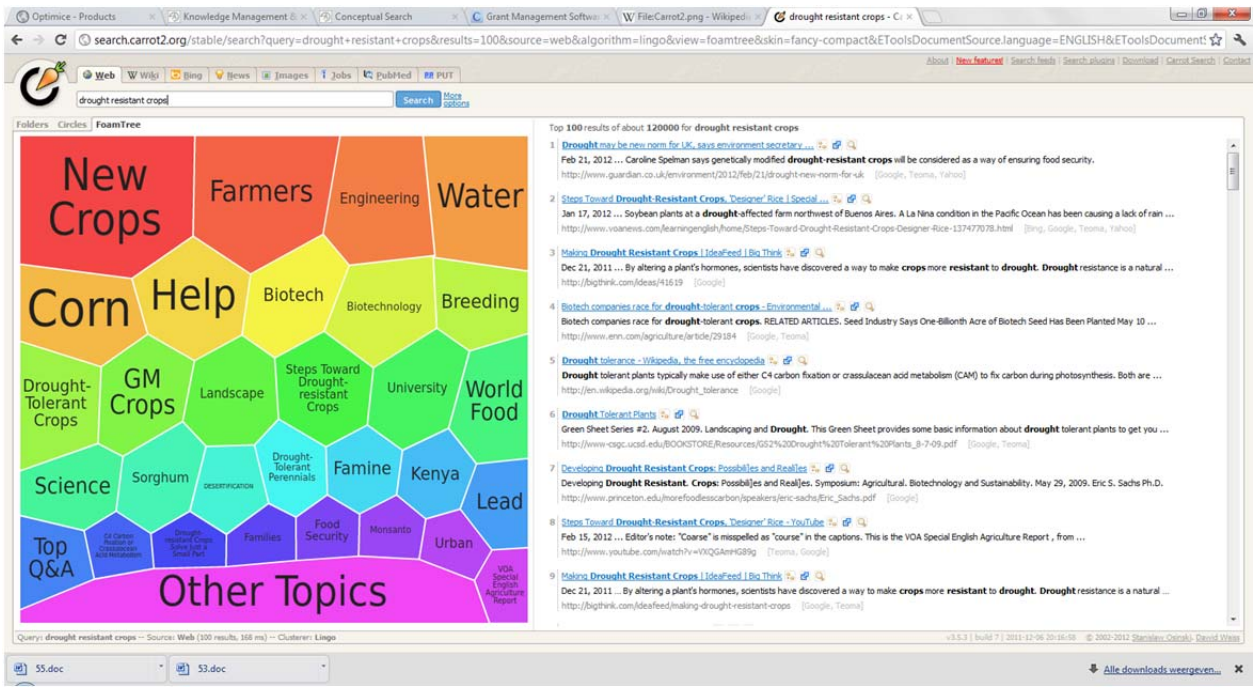


Figure 2: Conceptual Search Visualization Applied to Term "Drought Resistant Crops"

The Social Interaction System will facilitate direct interaction between support requesters and knowledge providers by offering a community-based platform that allows for making connections, enabling discussions and supporting collaboration in climate change technology transfer. To enable this, the CTC&N will deploy a social networking platform that provides tools to facilitate sharing ideas and raising questions within the overall community and thematic subgroups.

By combining the Social Interaction System and the Search System, the potential for network development and capacity building across the CTC&N through its activities will dramatically increase.

3.4 Establishing and Structuring the Network

Networking is an important component of DNVs daily business practice. DNV has established networks for clients on specific technologies, it uses them in its own technology centres, and it uses them to remain abreast of pertinent issues in which it operates (through numerous Technical Committees). The current focus of DNV's technical committees reflects DNV's longstanding commitments to the maritime industry, but also includes committees focused in areas such as wind technologies, and various certification services. In addition, DNV maintains memberships in a wide range of organisations through which it works and cooperates on a range of technology issues, including climate related issues. It also has extensive contacts in a range of Intergovernmental organisations including the IMO and the UNFCCC. In developing the network for the CTC&N, DNV will utilise its own existing networks to help the CTC&N reach out to industry, organisations, governmental and intergovernmental organisations with which DNV already has well established contacts.

Once the director and senior staff are in place outreach will begin. Designated focal points under the UNFCCC and donor Parties will be consulted in addition to DNV's already extensive network. DNV will

also utilise its extensive network of in-country offices and their own networks to ensure that local, national and regional interests are fully represented in the Network and captured within the knowledge management system. An important aspect of this outreach will be to involve organisation that work to mitigate and adapt to the impacts of climate change through education, hands-on training and other important tools to reach the most vulnerable, namely women and children and the rural poor. DNV firmly believes that in order to achieve its vision of a safe and sustainable future, all facets of society must be involved in designing solutions. Without full participation and buy-in sustainable solutions cannot be achieved. This is a philosophy that DNV will carry over to the CTC&N.

The Director and senior staff will also undertake outreach to the broad range of stakeholders that are needed to ensure enhanced collaboration is achieved. The CTC&N will seek to include Development Finance Institutions (DFIs) as an important partner in transferring technologies. DFIs already undertake important work in developing countries including through financing technology as well as financing a wide range of funds and organisations designed to reduce poverty, promote environmentally sustainable technologies, and build domestic workforces and start-up businesses providing technology and other services. In addition they also work with many local and national financial institutions in developing countries as well as within Donor countries.

Instead of competing with existing networks and organisations undertaking activities designed to enhance technology development and deployment, the CTC&N will seek to collaborate with these organisations and networks to ensure that Parties seeking assistance have the best access to the resources they need.

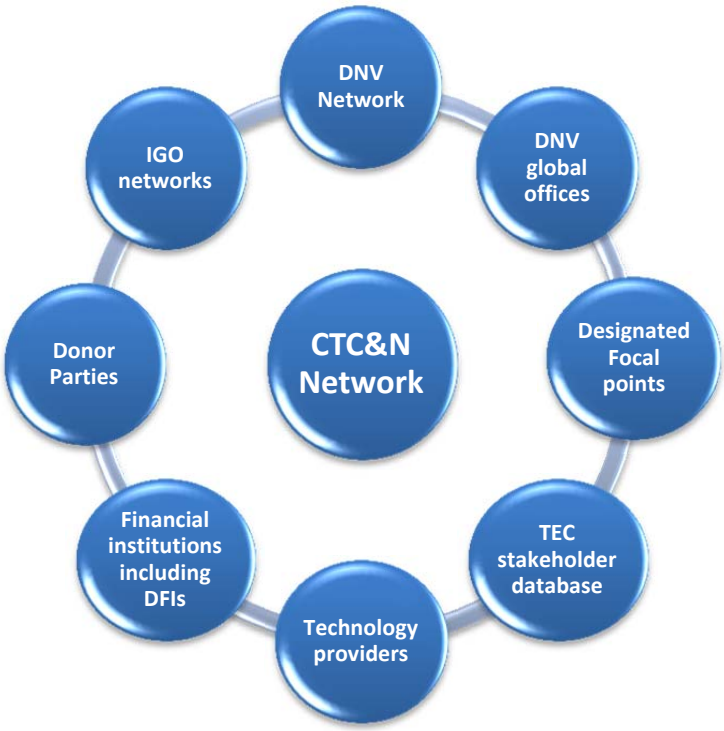


Figure 3: Key Elements of the CTC&N

Given the TEC's parallel role in facilitation, engagement of stakeholders, and information and knowledge sharing, DNV suggests that the CTC&N and TEC collaborate during the course of the Network's development to ensure a coordinated and cohesive approach to full implementation of the Technology Mechanism. The graphic below represents DNV's view of the main elements and starting point for development of the Network.

4 CLIMATE TECHNOLOGY CENTRE AND NETWORK MANAGEMENT PLAN

4.1 Establishing the CTC&N

This section outlines the steps DNV sees as necessary in developing and establishing the CTC&N in a quick and efficient manner. The process is laid out in four phases with the first phase coming prior to the CTC&N becoming operational. This early phase focuses on ensuring that key senior staff is in place quickly so that the CTC&N can be launched quickly once agreement is reached on the entity hosting the CTC&N. The scope of work within the first year of the CTC&N is broken down into two distinct phases: launch and start-up, and operations. Figure 4 below provides an overview of the various phases.

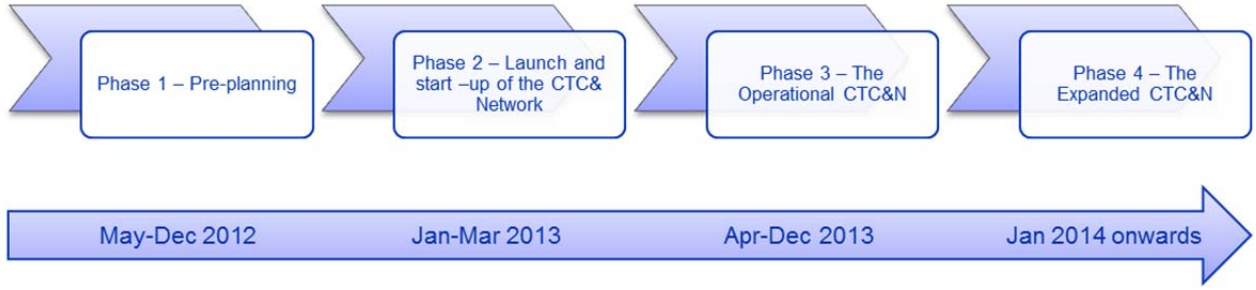


Figure 4: Phased Start-Up Schedule for the CTC&N

The first year of the CTC&N will focus on full development of the guidance, including modalities and procedures prescribed by the COP and the Advisory Board. DNV also recommends instituting a detailed process for handling requests from receipt of request through project completion (Figure 5, also included as Annex 8). Note that the staff and process times required for the steps illustrated in Figure 5 will vary significantly by type of request, as discussed further in Annex 7.

The approach detailed in Figure 5 provides for accountability and transparency and will utilize the knowledge management system detailed in Annex 4.

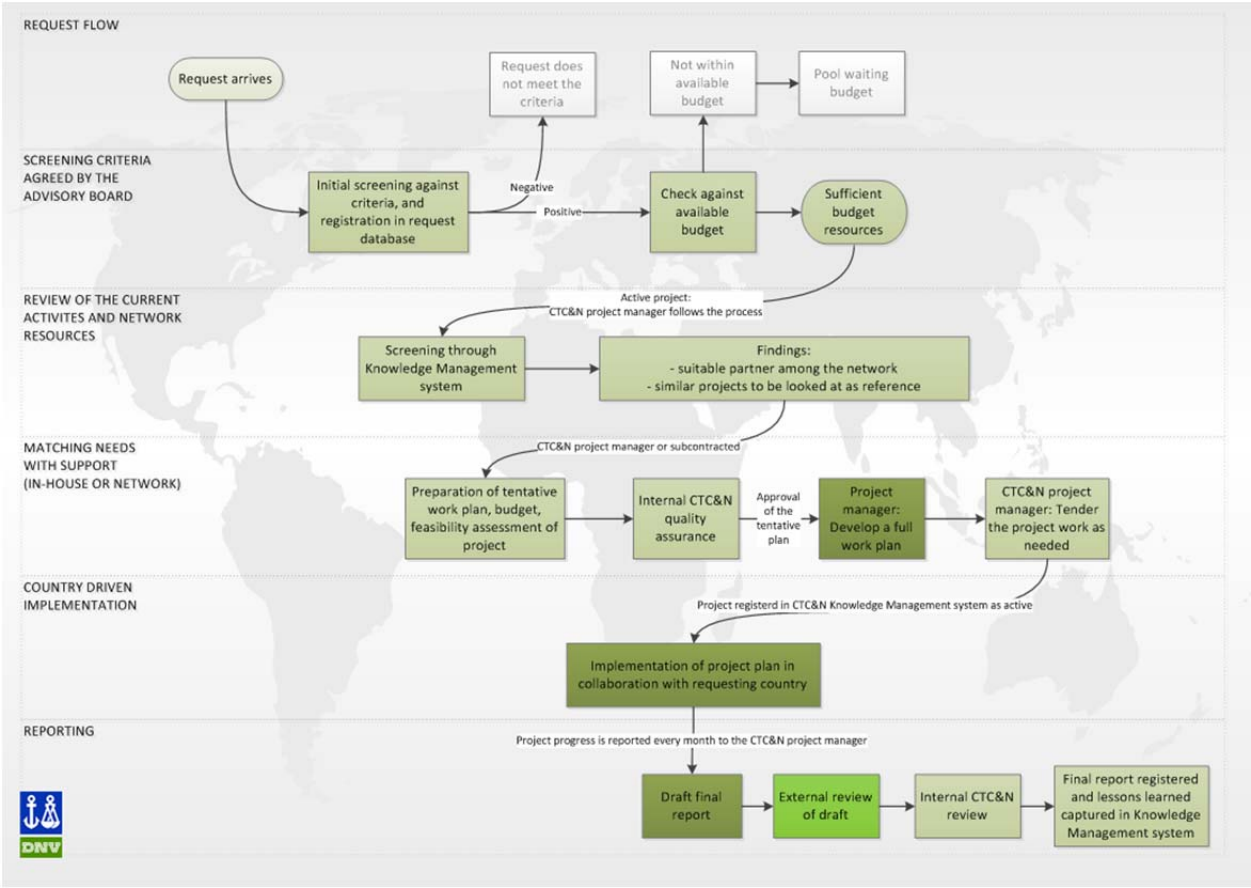


Figure 5: CTC&N Request Review Process Diagram

4.1.1 Phase 1: Pre-planning

DNV proposes a pre-planning phase in which DNV will begin the recruitment process for the Director position, and secure staff from within DNV to enable rapid start-up of the CTC&N. The DNV staff will in most cases be interim staff members that will likely phase out as the CTC evolves under the Director. Once the Director is endorsed by the Advisory Board, DNV suggests that the Director meet with the Advisory Board and the TEC in order to lay the foundation for the work that will begin in the next phase.

The primary deliverable from this phase is a skeletal CTC staff which can begin the launch process of the CTC&N.

4.1.2 Phase 2: Launch and Start-up of the CTC&N

The CTC will be launched with start-up staff of 5 experts who, under direction from the Director, will focus on rapidly establishing the CTC as a functioning entity. An important consideration during Phase 2 will be to structure full implementation of the CTC in such a way that the Centre will not be overwhelmed with requests once the operational phase of the CTC begins. As stated previously, DNV recommends that the scope of work related to requests from Parties be narrowed to a level that will enable the CTC to function while building and adjusting its internal capacities on the broad range of activities and issues it must undertake.

Work under this phase falls into three main areas. Many of the tasks listed in this section are interlinked and will occur simultanously rather than chronologically. See table below.

Phase 2	Months 1 – 3
Staffing	Recruitment of external staff for additional competence and to replace interim staff
	Additional core staff, including possibly regional hubs (based on availablity of funding)
Modalities and Procedures	Draft operational procedures for the CTC for finalization by Director covering products, services and partnerships
	Draft organisational and governmance procedures
	Draft project screening criteria and protocols.
	Draft of interim guidelines for request submittal.
	Draft of strategic plan for first four years.
Network & KM	Assessment of existing networks and activities to determine how best to structure the Network and the Knowledge Management system (KM).
	Interface between CTC&N KM systems and UNFCCC systems such as TT:CLEAR will be examined in the design of the KM.
	Construction of the KM.
	Assemble information on operations and outputs of other UNFCCC related architecture *inter alia* NAPAs, NAMAs, the Adaptation Committee, and MRVs for inclusion in the KM.
	CTC outreach to technology focal points, beginning with LDCs and SIDs and expanding to remaining developing countries.
	CTC outreach to existing Networks.
Regional Hubs	Based on availability of funding, Regional Hubs will be established

Table 2: Phase 2 Task Plan

The first task area is recruitment and hiring of additional core staff, including replacement of interim DNV staff. Budget permitting, launching of regional hubs will also be undertaken during this phase through recruitment of professional staff.

Development of modalities and procedures related to tools and services of the CTC&N will also be undertaken during this phase, as will modalities and procedures related to organisational and governance issues. Operational issues that will be covered include the types of support services available through the CTC&N, and distinguishing between the services provided by the CTC itself as well as those that could be provided by the Network. The structure and nature of the partnerships in the Network and how they interface with the CTC will also be addressed. Governance and organisational issues will include procedures that put into action the operational modalities and the governance structures needed in order to make the CTC&N an effective and efficient arm of the Technical Mechanism.

Organization and governance issues that will be addressed also include interaction between the CTC&N and the TEC, other elements of the UNFCCC architecture and intergovernmental and non-governmental organisations. Long-term tools such as strategic plans will be developed under this task as will modalities for interaction with the Advisory Board, the TEC, UNFCCC architecture, intergovernmental organisations and non-governmental organisations. Screening criteria and protocols to allow the CTC to function effectively in the context of more demands for support than can be accommodated in the near term will be drafted. These criteria and protocols will be ready for the Director to submit to the Advisory Board as early as practical. Interim guidelines for submittal of requests as well as procedures for expanding the scope work will be drafted as part of this task. Internal processes will be developed and finalised. Modalities and procedures as well as screening criteria will be developed utilising guidance from the Conference of the Parties and the Advisory Board.

The third task area encompasses the Network and the Knowledge Management system (KM system). KM is an important component across the CTC&N as it will house information of products, services, partners in the Network, and serve as a technology clearing-house. Specific sub-tasks under the Network include outreach to the DNV network, outreach to existing climate technology and other relevant Networks, and outreach to technology focal points in developing countries. Specific sub-tasks related to the KM system include its construction, as well as populating it with knowledge gained through all activities undertaken in this phase. As a first sub-task CTC staff will undertake an assessment to determine how to structure the KM in order to complement on-going work in other organisations. This will reduce duplication and ensure efficient knowledge management and dissemination of information by the CTC&N. Information on existing and related programmes will also be an important component of the Network as it will house information on existing and available partners within the Network as well as on their capabilities.

The main objective of this phase is to enable operation of the CTC&N to begin in month 4.

Deliverables under this phase include:

- Modalities and operational procedures for the CTC&N, including reporting requirements and timelines, development of strategic plans and business plans for first year.
- Project screening criteria and protocols
- Construction of the knowledge management system

4.1.3 Phase 3: The Operational CTC&N

The CTC&N becomes operational in month 4. Requests for assistance from Parties are accepted on the 15th of each month based on the interim guidelines finalized during the start-up phase, and as approved by the Advisory Board. Monthly reports will be generated providing an overview of requests received and actions taken.

During this phase the CTC&N Director will work closely with the Advisory Board to finalise any outstanding guidelines and procedures. The Director will also begin working with donors and other stakeholders to provide a status update of the CTC&N. The KM will also be used as a tool for outreach and information sharing between the CTC&N and stakeholders. The CTC will continue to add core staff during this phase as resources allow, growing to an anticipated staff size of ten (10) persons.

Project managers will play an important role in the CTC&N's process. Part of their function will be to work closely with the requesting Party to ensure that all products derived from the CTC&N are targeted to their needs and in accordance with guidance from the UNFCCC. The work that they undertake in collaboration with Parties, through the Network and with its stakeholders will be a measure of the success that the CTC&N achieves.

At the end of the first year the CTC will produce its first annual report, with the objective of illustrating near-term wins that clearly establish the CTC&N's value proposition going forward. This report will:

- Meet principles of accountability and transparency
- Describe requests for assistance from developing countries
- Describe activities carried out by the CTC&N
- Provide information on efficiency and effectiveness in responding to requests
- Describe ongoing work
- Describe lessons learned and best practices gained from the CTC&N's work

4.1.4 Phase 4: The Expanded CTC&N

Phase 4 will begin with the second year of operation of the CTC&N. The CTC will lift constraints on the scope of proposals that can be accepted, and prioritization processes will be strengthened to manage workflow.

Depending on resources expected to be available to the CTC, it will expand its geographic and sectoral scopes, including hubs to be established in key developing countries. Hubs can be established quickly and efficiently at existing DNV offices in these countries, with even a single CTC staffer. These hubs will initially focus on project review and management in their specific regions, although over time the hubs will take over more of the screening and review responsibilities of the headquarters core staff, as already happens in other hub systems in DNV operations.

5 TECHNICAL CAPABILITIES

The technical approach laid out in this proposal emphasizes a focused approach to delivering the CTC&N's services in as timely and streamlined a manner as possible to as many users as possible. The CTC&N needs to be able to start-up quickly in order to build a proven track record, but needs to remain organizationally lean in light of resource constraints. It needs to be able to address a very wide range of potential support topics, and needs to be flexible in adapting to changing resources and priorities. As emphasized in the Technical Approach (Section 3) this is not a typical organizational profile. Establishing and operating the CTC&N to these specifications requires a unique aggregation of host-organization capabilities and characteristics:

- Demonstrated focus and efficiency in operations (Section 6)
- Demonstrated customer orientation (Section 6)
- Demonstrated global focus and scope (Section 6)
- Demonstrated knowledge management and dissemination expertise (below)
- Demonstrated commitment to technology development and deployment (below)
- Demonstrated ability to operate in multi-stakeholder processes and environments (below)

- Demonstrated ability to build and manage expert networks (Section 6)
- Demonstrated technology expertise and understanding of technology transfer challenges (below)
- Demonstrated ability to manage and allocate funds (Section 6)
- Demonstrated flexibility in ability to adapt to relevant market conditions (Section 6)

DNV is uniquely positioned to support this range of capabilities and operational characteristics. DNV's status as a Nordic foundation and its mission statement of contributing to a "safe and sustainable future" give it a socially oriented framework and mission that distinguishes it from the typical business. As a customer-oriented company, however, DNV is market oriented, and must be efficient in the delivery of services by its more than 10,000 employees working with thousands of companies and governments around the world. Yearly, DNV manages around 20,000 individual projects, ranging from very small to more than USD 20 million. DNV's annual revenues exceed USD 1 billion.

5.1 Development and Transfer of Technologies

A central challenge in the international negotiations under the UNFCCC has been the question of how developing countries' efforts to eradicate poverty and enhance economic growth can be realised without corresponding increases in GHG emissions. To accomplish this objective urgent action is required to accelerate the diffusion of low carbon technologies. The central tasks are:

- Boosting the pace and volume with which technology transfer is being undertaken
- Ensuring that technology transfer programmes are aligned with long term development targets as well as mitigation and adaptation objectives.

Successful transfer and deployment of technology goes far beyond the shipping of ready-to-use equipment to developing countries. It requires:

- Long-term engagement and partnerships between public and private sectors, including in the countries requesting assistance
- Stable, predictable and transparent investment regimes
- Sustained training and capacity building programmes
- Enabling environments with institutional and regulatory frameworks that support low-carbon technology diffusion
- Identifying, adopting, adapting, improving, and employing the most appropriate technology and supporting infrastructure.

DNV's capabilities on the key aspects of technology transfer are further discussed in this Section and our experiences are further described in Section 6.

An important strategy for DNV in its daily operations has been to establish DNV Academies for training and capacity building and to make extensive use of Joint Industry Projects to contribute to successful and cost-effective research, development, and demonstration of innovative, sustainable technologies. The sharing of knowledge is a key driver of progress, and DNV has throughout its history developed rules and

standards that incorporate and disseminate technology knowledge. DNV's technology qualification services extend the reach of DNV's technology transfer impact.

DNV is a core member of the Climate and Energy initiative of the World Business Council for Sustainable Development (WBCSD), and has through this group been following the development of the Technology Mechanism and the work of the EGTT. In preparations for COP17 in Durban, WBCSD focused on identifying the key enablers for low-carbon technology diffusion.

Key sectors like the power, transport, forests, building and cement will require different enablers to encourage diffusion of low-carbon technologies. Further, technologies are diverse and numerous and at different stages of maturity; progressing from an initial learning phase down the cost curve to commercial viability. They also have different carbon-mitigation potential and require different policy responses in different countries. The technology transfer and diffusion challenge calls for a matrix of enablers for different technologies which are highly dependent on both sectors and regional issues. With DNV's experience and capabilities in technology and innovation, as well as its developing country deployment experience combined with a well-managed network, the CTC&N will cover these challenges. The different learning phases and policies that need to be recognized in the CTC&N's work are illustrated in Figure 6.

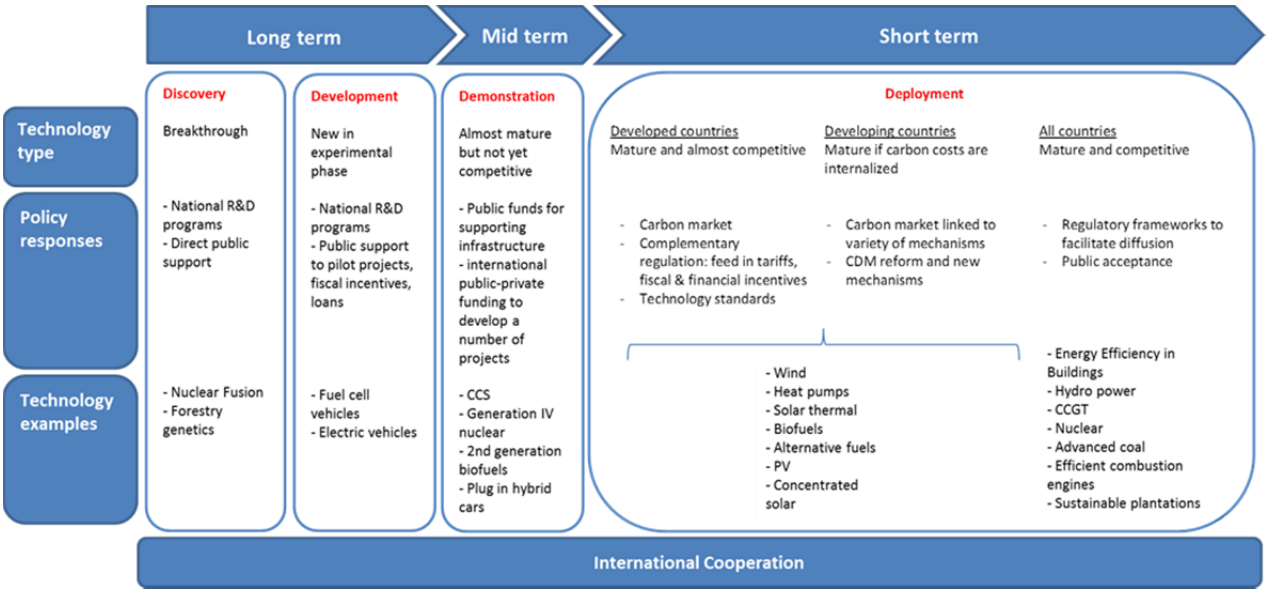


Figure 6: Technology Learning Phases and Policies
(Source: WBCSD, Towards a Low-Carbon Economy, 2009)

5.2 Breadth and Depth of Expertise of Relevance for Hosting the CTC&N

Possessing or having access to a wide range of topical expertise, as well as the ability to manage potentially infinite amounts of information relevant to the scope of the CTC&N, are critical to the success of the CTC in its role in managing and supporting the larger CTC Network.

While the CTC will be populated with staff possessing key areas of expertise, it will be impossible for the CTC&N in the early phases of its operations to possess much of the expertise that would help support the CTC&N's mission. As the CTC's hosting organization, DNV and its thousands of technical, managerial, communications, regulatory, and legal experts can supplement the CTC&N's internal expertise in numerous ways.

5.2.1 Specifically relevant subject areas of expertise

Mitigation and Adaptation Technologies. DNV has several hundred technical experts who focus day to day on mitigation and adaptation technologies from wind and solar energy to the dozens of technologies encompassed by the Clean Development Mechanism for which DNV is accredited. DNV is known globally for its on-shore and off-shore wind energy expertise, its solar energy integration expertise, its energy efficiency expertise, and its CDM expertise. Through the recent acquisition of KEMA (DNV-KEMA www.dnv-kema.com) DNV now has in-depth expertise throughout the electricity value chain, from generation technologies to transmission and distribution to the design of smart-grid applications and end-user energy efficiency.

Knowledge Management. DNV entered the specialized knowledge management field in 2006 with the acquisition of CIBIT, Europe's first knowledge management consultancy practice, and a spin-off of the Utrecht University for Applied Sciences. DNV's knowledge management practice includes 23 consultants with experience across portal development, knowledge sharing, risk assessment, and deploying good practice methodologies and lessons learned. DNV is a trusted international knowledge management partner to its corporate, government and consortia clients, assessing and improving knowledge management programmes, performing risk assessments on critical knowledge, management of networks for sharing of good practices and lessons learned, designing effective knowledge portals and repositories, and transfer of know-how in knowledge management applications among different regions and work cultures.

Technology Qualification (TQ). TQ is defined as: *the process of providing the evidence that the technology will function within specific limits with an acceptable level of confidence*. The process aims at assisting in building and operating new technologies in a financially sound, safe, reliable and environmentally friendly way. TQ enables investors, innovators and operators to be first movers in introducing new technology, while minimizing technology performance risk. This includes technologies that may be proven within one region or application, but unproven in others. DNV's TQ services help ensure (within an acceptable confidence level) that a new technology will function within specified limits. Steps in the TQ process include: Technology Qualification Management; Technical Analysis and Simulations; Technical Risk and Reliability Analysis; Materials Technology; Laboratory Testing.

In addition to these core competencies for the CTC&N, relevant areas of technical expertise available to the CTC&N through DNV as a host organization include: chemical and mechanical process engineering; materials technology expertise; pipeline and civil engineering; electric transmission and distribution engineering; geological and reservoir expertise; risk and reliability expertise; environmental impact expertise; and legal, economic and political expertise.

These areas of expertise are currently deployed by DNV in many different ways which are of potential relevance in supporting the CTC&N, including: feasibility studies; safety risk assessments; environmental impact assessment; reliability studies; technical verifications and certifications; project risk management;

verification of GHG emissions; qualification of new technologies; asset management; enterprise risk assessment; development of regulatory frameworks; and research and development.

5.3 Capability to Build and Facilitate Transfer of Technology

DNV experts and training professionals have been involved in a number of different programs with the purpose of building capacity and facilitating the implementation of sustainable solutions in developing countries. Three short examples are given below:

- In Zambia, DNV has managed seven Cleaner Production (CP) Programs as part of the Norwegian sponsored Industrial Pollution Prevention Program (IPPP). The work was carried out together with the Environmental Council of Zambia (ECZ) and the Zambia Association of Chambers of Commerce and Industry (ZACCI) as local partners. The CP programs achieved remarkable economic savings, as well as environmental and health impact improvements. As a supplement to the basic CP training, additional courses in environmental management systems (EMS), business economy and investment analysis, office administration and management were also delivered. In addition a seminar on how to integrate Cleaner Production with the Zambian Environmental Impact Assessment (EIA) Regulations was carried out.
- In Nigeria, DNV has provided a training program on both SHE management and technical skills to local Nigerian companies in the upstream oil and gas industry. The program was aimed at raising the qualifications of the local companies to become subcontractor or partners with international oil & gas companies.
- In China, DNV has helped to strengthen the central environmental administration (SEPA/CCCI) and local environmental protection bureaus (EPBs) in their work on developing and implementing ISO 14000 standards in China. The capacity building efforts were targeted at three different levels: Government (central and local level), ISO 14000 practitioners (consultants, training institutions, certification bodies and industry associations), as well as industrial companies.

DNV has established training Academies which provide capacity building and training courses in a number of competence areas; ranging from climate change, environment, quality and safety to technical courses on for example renewable energy technologies and smart grids. The DNV Academies are a way to impart knowledge and expertise to customers worldwide by drawing on decades of accumulated experience, research and development that DNV has accrued globally. Because the trainers are working professionals in the field, the course participants benefit from first-hand expertise and experience. The purpose of the academies is to create enticing, engaging and enjoyable learning experiences which inspire improvement, development and change. The Academies have experience with a number of different delivery modes such as classroom courses, module based programs and customised solutions.

In addition to the Academies around the world, DNV has established a Clean Technology Centre in Singapore and a Sustainability Centre in Beijing. These are further described in section 6.

5.4 Capability in International Multi-Stakeholder Cooperation

DNV has a long history of operating in multi-stakeholder processes, including across sectors and industries, and has long history of involving private sector companies in the development and deployment of technology innovation.

Some of these multi-stakeholder processes have been managed on behalf of external clients, including the European Union. This includes, for example, DNV's management of a major initiative on knowledge development and knowledge sharing on carbon capture and storage (CCS). DNV is coordinating the CCS network under this project, and is providing a range of knowledge management services including: 1) Supporting and coordinating networking through the design and facilitation of annual events to broker contacts between network members. 2) Branding the network through a suite of web sites, brochures, exhibition pavilions, etc. 3) Creating a secure community platform for the EC and project members to hold discussion forums and provide a content management platform. 4) Hosting and maintaining an Internet web site for increased public awareness of CCS and for the dissemination of project results. 5) Creating and facilitating best practice sharing processes and workshops. 6) Coordinating and facilitating information sharing events that emanate from the themes identified in the knowledge markets.

Other multi-stakeholder processes have been managed internally on behalf of DNV and its own large client networks. DNV has always been engaged in developing new technologies, methodologies and services, and we believe that the sharing of technology knowledge is a key driver of progress. DNV reinvests 6% of its annual revenue into various forms of innovation and development initiatives, administered by its Research and Innovation Dept. To leverage its own resources, and to ensure we focus on industry's real challenges, DNV engages heavily with other technology stakeholders, in particular technology developers and consumers, through a vehicle known as Joint Industry Projects (JIP). Current and recent JIPs have encompassed:

- LNG and natural gas
- Pipelines
- Ports and terminals
- Carbon capture, transport and storage
- Power generation
- Power transmission and distribution
- Wind energy

Cumulatively, DNV has organized and participated in hundreds of JIPs, and leveraged hundreds of millions of dollars into the development and deployment of sustainable technology solutions through the JIP vehicle.

Other examples include cooperative efforts between DNV and individual partners to catalyse new technology initiatives, as reflected for example in DNV's partnership with Singapore to launch in 2010 the Clean Technology Centre, the multi-stakeholder mission of which is further discussed in Section 6. Recognising that clean technology innovation and commercialisation requires collaborative business models, the Clean Technology Centre has amongst others signed agreements with the Energy Research Institute at Nanyang Technological University and the National University of Singapore (NUS). The agreements involve joint research and development activities of mutual interest in various areas within clean technology.

5.5 Capability to Ensure Fair and Open International Tendering Processes

DNV has supported major tendering processes on behalf of client organizations and government ministries.

DNV works to ensure that the business practices of suppliers, sub-contractors and agents do not conflict with DNV's values and responsibilities for sustainable development, long term economic planning, environmental protection, ethics, human rights and labor rights, or safety and health. DNV acknowledges that we have a role to play in broadening the diversity of people/companies who participate with us in our regular business and in our delivery of services to customers.

DNV emphasizes this throughout the procurement process, from prequalification of tenders to contract signing, and finally the delivery of goods and services. Contractors have to comply with DNV's Personal Code of Conduct in the same way as full time DNV employees, and members of the Board and Council. Suppliers, sub-contractors and agents are presented with a Supplier Code of Conduct and in some cases a Corporate Responsibility Declaration form. In addition, all agents have to sign an "International Representative Information Questionnaire and Confirmation" before appointment by DNV.

5.6 Capability to Manage and Administer Multiple and Complex Projects in Developing Countries

Yearly, DNV manages around 20,000 projects globally varying in size from very small to more than USD 20 million. DNV uses one common approach for project management in DNV, regardless of where the project is located. This approach is based on Best Practice Project Management standards and adjusted to fit the needs of the situation. Having uniform processes helps to maintain consistency and a high level of performance. In addition, it allows for exchange of resources worldwide, improving the organisation's competitiveness and knowledge.

The project life cycle is a collection of sequential and sometimes overlapping project phases as shown in Figure 7. The life cycle thus provides the basic framework for managing the project, regardless of the specific work involved.

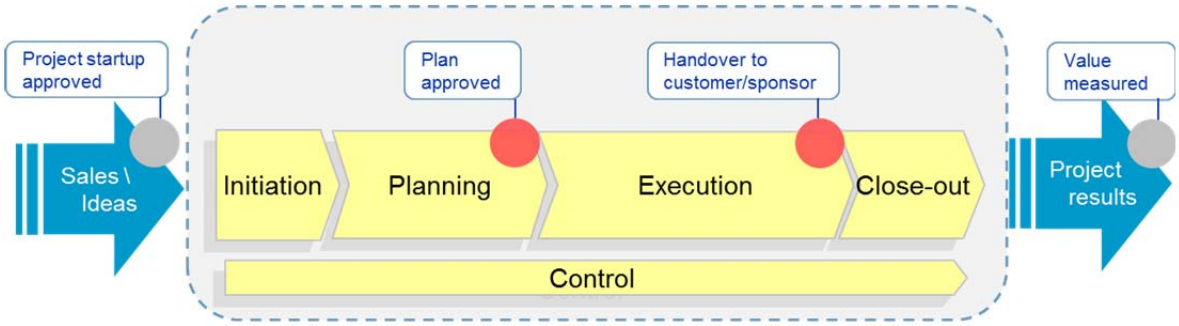


Figure 7: The Project Life Cycle as Standardized by DNV Practice

6 PAST PERFORMANCE

DNV has a 150 year history, employs more than 10,000 staff in more than 100 countries, and manages more than 20,000 customer projects per year. As such our record of performance is extensive, and only the most directly relevant examples are included.

6.1 Efficiency in Operation

DNV is a successful company working in a commercial environment. The meeting of contract schedules and time-sensitive project conditions is a prerequisite for maintaining and growing a customer base. There is a constant effort to improve the efficiency of delivery of our services and to learn from our mistakes. Our project and knowledge management systems have been developed to ensure that learning is institutionalised so that systematic mistakes are corrected as soon as possible. DNV is ISO 9001 and ISO 14000 certified. DNV is a large company with a large number of offices, and the management is given the needed authority such that efficient operation is ensured at a local level.

6.2 Cost Control

As a foundation DNV has no shareholders that require financial records, but DNV follows corporate reporting regulations in 100 countries. There are yearly independent audits and yearly budget planning processes to forecast costs and revenue. There is monthly reporting of all financial activities, and the cost controllers in each unit are trained in project control. All projects have monthly reporting schedules and have to report based on the project plan. The hours and resources used are reported against the project plan and the income generated. DNV has projects of all sizes, and project management and budgeting of activities are required procedures for all projects.

6.3 Assembling Technical Assistance Teams and Cross-Sectoral Teams

DNV offers a wide range of services, and has a large number of projects that require cross-sectoral competence. DNV uses internal competence, but also has a wide base of sub-contractors that are utilised. Sub-contractors need to meet the same quality required from DNV employees, and are given the training needed, for example to perform audits or evaluations for DNV. Sub-contractors for CDM and Certification work are all registered in competence databases, and the training requirements and competencies are kept in compliance to the relevant standards. DNV has organised, run, and been involved in a large number of EU projects and Joint Industry Projects where collaboration with different experts is required.

6.4 Regional coverage

DNV has approximately 300 offices in 100 countries, as listed below, with more than 10,000 employees from more than 85 different nations. We have a long history of locating offices in developing countries, and technology development has always been a core business for DNV. DNV has developed an international organisation where local competence is used when possible, and expert competence is brought in when needed. Our customers are important regardless of geography. There is a strong focus on knowledge transfer through project development. We are aware of the challenges in operating in different geographies, and have developed internal systems where the knowledge within the DNV network is available to all users. The competence and experience gained from many years of global knowledge management is one of the many competences DNV would bring into the CTC&N.

Countries with DNV offices:

• Algeria	• Denmark	• Italy	• Pakistan	• Spain
• Angola	• Ecuador	• Japan	• Panama	• Sri Lanka
• Argentina	• Egypt	• Jordan	• Papua New Guinea	• Sudan
• Australia	• Eritrea	• Kazakhstan	• Philippines	• Sweden
• Austria	• Estonia	• Kuwait	• Poland	• Syrian Arab Republic
• Azerbaijan	• Ethiopia	• Latvia	• Portugal	• Taiwan
• Bahrain	• Faroe Islands	• Libyan Arab Jamahiriya	• Puerto Rico	• Thailand
• Belgium	• Finland	• Lithuania	• Qatar	• Tonga
• Bosnia and Herzegovina	• France	• Malaysia	• Republic of Korea	• Trinidad and Tobago
• Brazil	• Georgia	• Malta	• Romania	• Tunisia
• Brunei Darussalam	• Germany	• Mexico	• Russian Federation	• Turkey
• Bulgaria	• Ghana	• Montenegro	• Samoa	• Ukraine
• Canada	• Greece	• Morocco	• Saudi Arabia	• United Arab Emirates
• Chile	• Greenland	• Netherlands	• Serbia	• United Kingdom
• China	• Hungary	• Netherlands Antilles	• Singapore	• United States
• Colombia	• Iceland	• New Caledonia	• Slovakia	• Uruguay
• Cook Islands	• India	• New Zealand	• Slovenia	• Vanuatu
• Croatia	• Indonesia	• Nigeria	• Solomon Islands	• Venezuela
• Cyprus	• Iran	• Norway	• Somalia	• Viet Nam
• Czech Republic	• Israel	• Oman	• South Africa	

Table 3: Countries with DNV Offices

6.5 The Clean Development Mechanism

DNV is the largest validator and verifier of Clean Development Mechanism projects under the Kyoto Protocol. DNV's began work on market and project-based mechanisms almost 15 years ago. This has developed into our current DNV Accredited Carbon Services Unit that employs more than 150 employees with 20 technical review staff located at DNV headquarters in Norway, and local hubs around the world. As shown below, DNV's largest CDM offices are in China and in India

The current CDM office locations and number of people:

Norway	20
Russia	5
India	29
Australia	4
China	29
Malaysia	9
USA	17
Brazil	9

There is a centralised staff recruitment and competence function that manages the complicated technical requirements facing experts in validating and verifying CDM projects.

6.6 Previous Experience with Similar Centres

DNV operates a range of centres that can be analogized to the CTC&N A few examples are provided here.

6.6.1 The Norwegian NOx Fund

The Næringslivets NOx Fund was established in 2007, and DNV serves as the Fund's sole technical advisor. DNV assisted the fund during the initial establishment phase, the regular operational phase and the termination and reporting phase of the first NOx Fund period. DNV's current support contract goes to 2013, and an extension is expected. One aspect of DNV's work with the Fund involves the assessment of applications for support from the Fund. DNV has reviewed more than 800 such applications during the course of the Fund's lifetime, during which some $300 million dollars have been deployed. DNV also has responsibility for verifying the NOx reductions being claimed by recipients of the Fund's support for the installation of a range of NOx control technologies. DNV has also played a technology review and qualification role for NOx abatement and fuel efficiency initiatives.

6.6.2 DNV's Carbon Capture and Storage Network

The European CCS Demonstration Project Network (CCS Project Network) has been initiated by the European Commission (EC) to facilitate the exchange and dissemination of new knowledge generated by the first large scale CCS plants in Europe. DNV is assisting the Commission in establishing the CCS Project Network. DNV is complementing general Commission capacities through the provision of specialized technical expertise and by organizing events, as well as monitoring participating projects using a customized methodology. DNV will provide services to the Commission for the initial three years of the Network's operation; this includes building the Network's identity, both within the industrial and research communities and beyond (e.g. with policy makers and general public).

The Network will play a central role in the demonstration of CCS technologies in the EU. It has been established to enhance co-ordination between first movers and add value to its members through three related tasks:

- Exchange of information and experience, and identification of best practices, to make optimal use of the best technologies available in Europe, primarily through knowledge sharing;
- Provision of a common EU identity to Network members and higher visibility for individual efforts;
- Provision of detailed information and concrete results from the demonstration projects to help build public confidence about CCS;

Information will be gathered through the work of the CCS Network to help focus on policies establishing a long-term value chain for CO_2, and to facilitate Europe's decision-making and reaction speed. Furthermore, the Network should guide coherent and effective interaction of participating projects with related R&D undertaken across the EU.

6.6.3 DNV`s Clean Technology Centre in Singapore

DNV started a process in 2009 with the Economic Development Board in Singapore as part of the Global Clean Energy HUB. The strategy for the EDB was to develop partnerships that added value innovation and incubation as illustrated in Figure 8 below. DNV opened the Centre in 2010 with a vision that the Clean Tech Centre is to go beyond transactional relationships and develop long term strategic relationships. There is an emphasis put on building local delivery capabilities through extensive on-the job training programs. There is close cooperation with Corporate DNV Research & Innovation in Oslo in order to facilitate technology transfer. Six capacity building areas have been identified forming the core of the DNV Clean Technology Centre: Technology Development, Green Ship and Offshore Design, Green Ports, Climate Change Adaptation, Sustainable Cities and Emissions Trading.

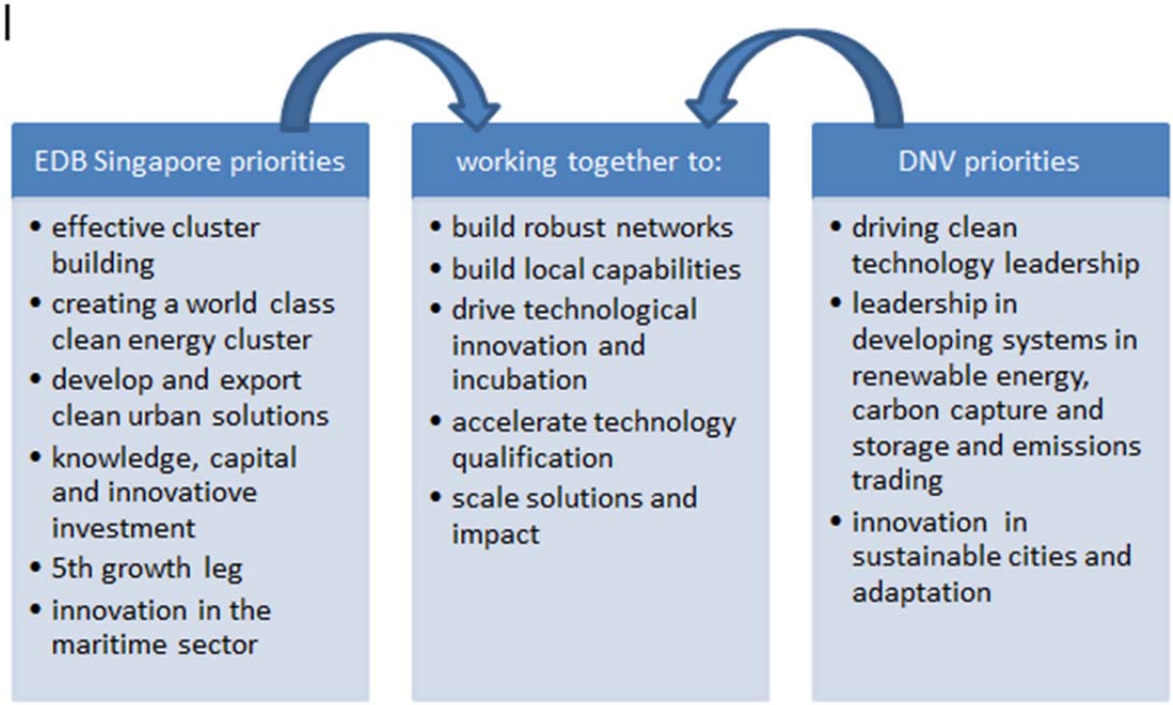


Figure 8: Combined Priorities of DNV's Clean Technology Centre

6.6.4 DNV Certification / Business Assurance

DNV Business Assurance was started in 1989 and provides certification, assessment and training services to assure the performance of customers' products, processes and organisations across a wide variety of industries globally. DNV Business Assurance has grown from a small office in Norway to having international headquarters in Milan, Italy and a network of 1600 employees in 48 countries divided into four divisions lead from Stockholm, Sweden; Milan, Italy; Houston, Texas and Shanghai, China.

DNV Business Assurance handles thousands of certification requests per year. The certification business requires that the process from request to report is streamlined, efficient and of high quality. A number of the activities in a certification process are comparable to the process described for the CTC&N. There is screening for compliance or completeness, assessment of the project, assessment of the report and quality control routines, and international networks that are maintained in standards development.

7 EXISTING GOVERNANCE AND MANAGEMENT STRUCTURES

7.1 Overall Management System in DNV

DNV ensures evaluation of operational performance through its DNV Management System (DMS). The DMS includes policies, instructions, procedures and processes that apply to all in DNV. Documents applicable in a certain region or for an independent business unit or country are published as an Operating Procedures (OP).

The DMS is outlined in Figure 9 below and will be used as a basis when establishing a management system for the CTC&N. Annex 11 provides a more detailed overview of the most important elements of DNV's governance and management structures as they relate to hosting the CTC&N.

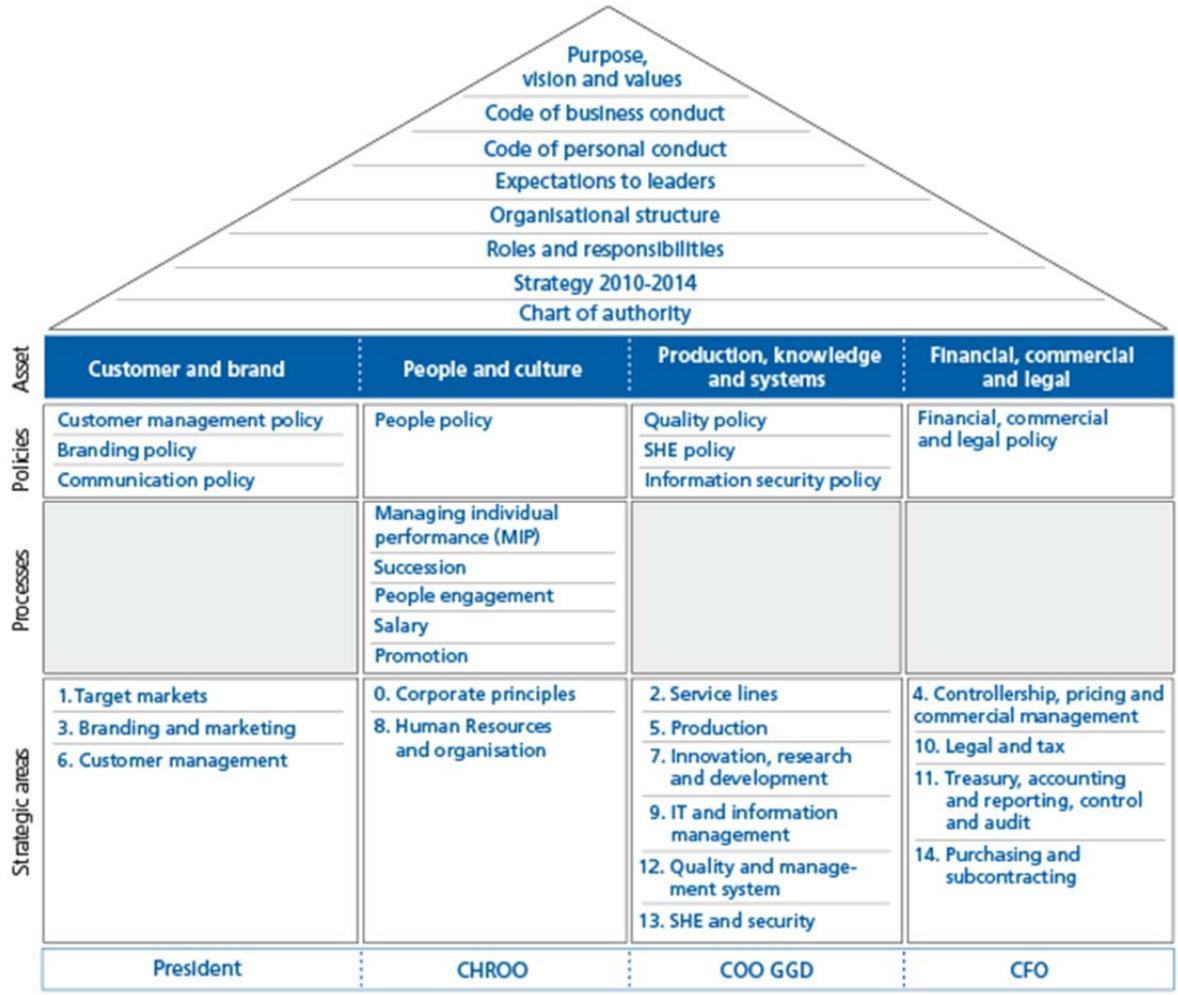


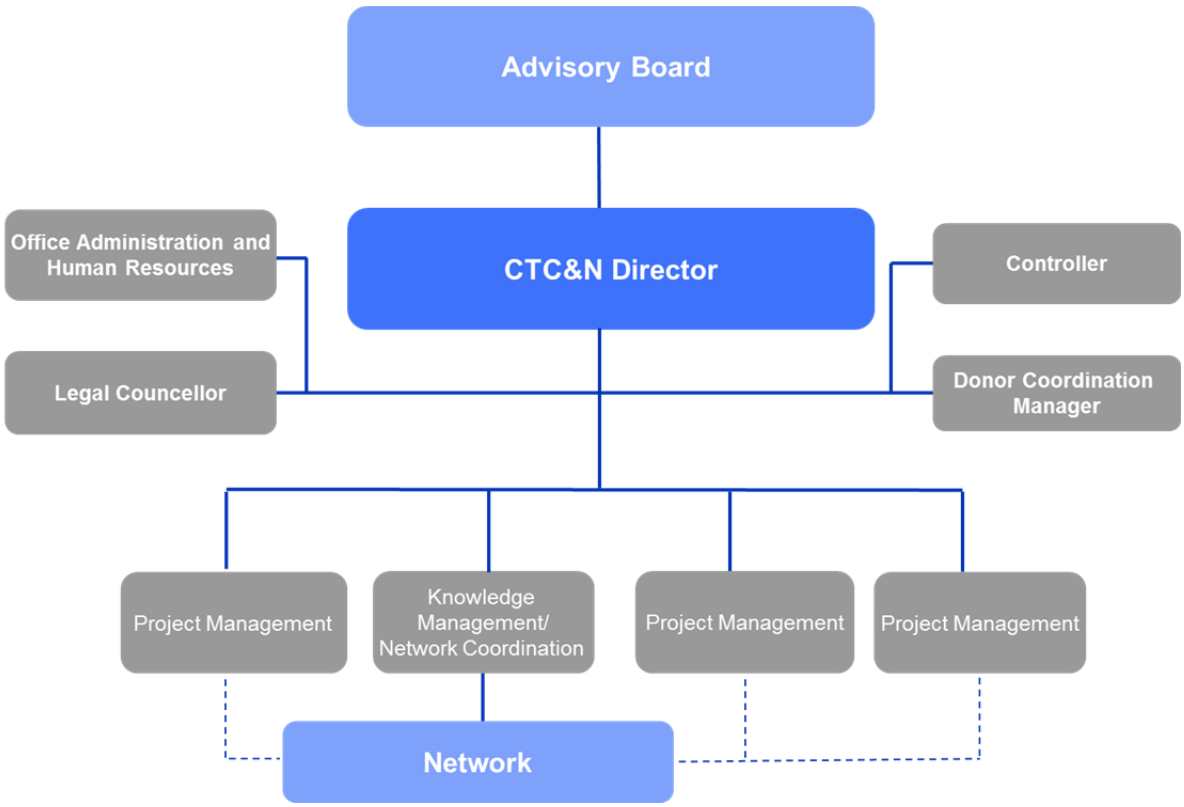
Figure 9: DNV Management System Outline

ANNEX 1

PROPOSED ORGANIZATIONAL CHART OF THE CLIMATE TECHNOLOGY CENTRE

Below is an organization chart representing the structure of the CTC&N for the first and second year. The option of CTC Hubs as outlined below will only occur once sufficient funding is secured.

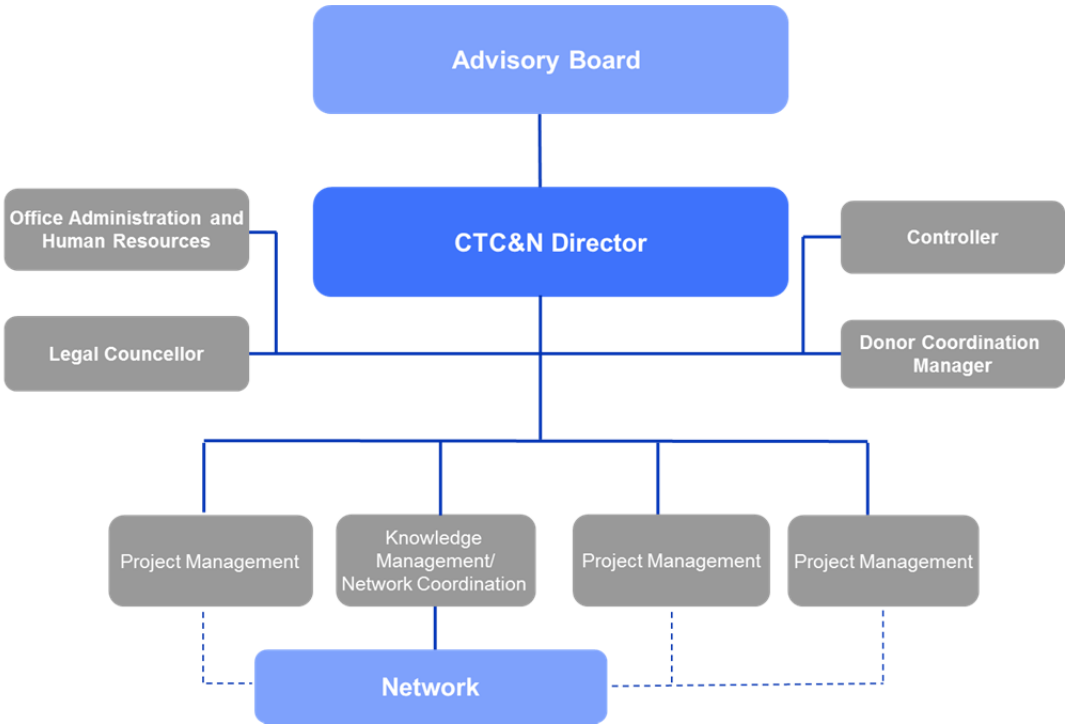
Organizational structure of the CTC&N– First Year



In the above organizational chart, overall project management will be the responsibility of a lead project manager; however staff across the various sections will undertake project management given the small staff. Projects will be assigned matching the needs of the request to the expertise of the project manager.

During the first year some positions will not be full-time i.e. the legal function, the office administration function as well as the controller function. The budget prepared in Annex 3 has assumed a 50% work load for these functions. Fulltime positions are the Director, the Donor Coordination Manager, the Knowledge Management staff person and the lead project manager.

Organizational structure of the CTC&N – Second Year



The organizational structure takes into account the various roles of the CTC&N as knowledge manager, consultant, technology expert and recipient of funds from various organizations. The main responsibilities of the roles outlined in the organization charts above are outlined in the following table:

Role	Main responsibilities
Director	Reference is made to Annex 2. The Director will, during the early phases of start-up, be supported by DNV employees with skills that enable the Director to (as needed) get up to speed on the CTC's technology competence and knowledge management structures, the UNFCCC processes and negotiations in particular as they relate to the development and transfer of technologies and the Technology Mechanism. Priorities during the first phase for the Director will include: • Interfacing with the Advisory Board. • Interfacing with the TEC. • Outreach to UN implementing Agencies to bring existing Networks on-board. • Outreach to other intergovernmental and nongovernmental organizations in order to bring those networks on board.

	• Hiring key senior personnel for the implementation phase.
Donor Coordinator Manager (Assistant Director)	• Working with donors and managing finances according to the modalities and procedures. • Interface with Parties on behalf of the Director (when needed), the Advisory Board, the TEC, other UN organizations. • Promote CTC at conferences, meetings etc. • Responsible for that CTC is visible (marketing, information).
Office Administration and Human Resources	• Secretarial work • Organization of travels and meetings • Staff recruitment
Controller	• Budgeting • Monthly or quarterly financial reports • Financial statement preparation • At start-up: responsible for financial reporting systems for project developers and managers
Legal Counsellor	• Contracts/implementing agreements/MOUs • At start-up: Setting up systems to check IP rights, legal review systems specific to CTC
Project Manager (s)	• Receiving requests • Initial review of requests • Develop project plans • Feasibility studies • Monthly reporting from implemented projects • Ensuring review of project reports • Final statement • Interaction with the network

Knowledge Management/Network Manager	• Interaction with the network
	• Setting up reporting systems that allow
	  o knowledge capture
	  o transparency
	• Build up internal network capabilities “search and match” system

ANNEX

2

OUTLINE OF TOR FOR THE DIRECTOR OF THE CLIMATE TECHNOLOGY CENTRE

BACKGROUND

The Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), by its decision 1/CP.16, established a Technology Mechanism which consists of a Technology Executive Committee and a Climate Technology Centre and Network with their respective functions.

The Mission of the Climate Technology Centre and Network is to stimulate technology cooperation and enhance the development and transfer of technologies and to assist developing country Parties at their request, consistent with their respective capabilities and national circumstances and priorities; in order to build or strengthen their capacity to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations to support action on mitigation and adaptation and enhance low emissions and climate-resilient development.

QUALIFICATIONS

(i) Advanced university degree in economics, environmental sciences or other relevant discipline. A combination of relevant academic qualifications and extensive experience may be accepted in lieu of the advanced degree.
(ii) At least fifteen (15) years relevant experience of which seven (7) years should have been at the international level.
(iii) Proven track record of excellent management and technical leadership skills and experience in leading multicultural teams.
(iv) Expert knowledge and proven track record in technology transfer and/or the development of technologies within an international context.
(v) Proven analytical skills of complex human resources, budgetary, financial and administrative management policy and programmatic issues leading to innovative administrative actions.
(vi) Fluency in written and spoken English. Working knowledge of French and of other United Nations languages desirable.

PERSONAL QUALITIES

(i) Excellent interpersonal and verbal/written communication skills
(ii) Mature judgment and initiative, imagination and resourcefulness, energy and tact
(iii) Proven ability to provide strategic direction
(iv) Ability to identify client needs and appropriate solutions
(v) Ability to maintain productive partnership with clients.
(vi) Strong people management skills
(vii) Extensive travel must be expected.

RESPONSIBILITIES

Under the guidance of the Advisory Board of the Climate Technology Centre and Network, the Director will be responsible for the daily operation of the Climate Technology Centre and Network, including full responsibility for administrative, financial and personnel matters.

Daily operations:

The Director shall ensure that:

(i) The Climate Technology Centre and Network performs the functions prescribed by the Conference of Parties as contained in decision 1/CP.16, paragraph 123.

(ii) the Climate Technology Centre and Network manages the process of receiving and responding to requests from developing country Parties and work with the Network to respond to such requests;

a. Receive and assess requests and refine and prioritize those request in conjunction with the nationally designated entity with the aim of establishing its technical feasibility;
b. Respond to requests, through either the Centre or the Network, based on the use of the most appropriate capacity and expertise in accordance with its approval modalities and procedures;

(iii) the Climate Technology Centre is designed and managed to maximize the effectiveness and efficiency of its operations:

a. Ensure a lean cost-efficient organizational structure;
b. Manage a small core team of professional and administrative staff

(iv) the Climate Technology Centre provides an annual report of the activities of the Climate Technology Centre and Network, in order to facilitate the preparation of a joint annual report by the Technology Executive Committee and the Climate Technology Centre and Network on the activities of the Technology Mechanism, consisting of the report of the Climate Technology Centre and Network and the report of the Technology Executive Committee in accordance with their respective functions.

Governance:

The Director shall be the secretary of the Advisory board. The Director shall ensure that the Climate Technology Centre and Network operate within terms of reference and be accountable to and under the guidance of, the Conference of the Parties, through an Advisory Board.

Please note:
1. Qualified women candidates and candidates from developing countries are especially encouraged to apply.

ANNEX 4
PROPOSED CTC&N KNOWLEDGE MANAGEMENT SYSTEM

4.1 Introduction

Effective climate technology knowledge management and dissemination will be perhaps the single most important feature of a successful CTC&N. General requirements of the CTC's Knowledge Management System based on DNV's approach described in the proposal are listed below:

Ease of finding content: the ease of navigation to, and retrieval of, any given knowledge element is of prime importance for a CTC&N Knowledge Management System. This should be addressed by building up an understanding of stakeholders' mental models and task contexts when searching for particular types of knowledge. From this understanding, the proper design of both the navigation structure of the CTC&N Knowledge Management System, as well as the functionality of the search facility, can be assured.

Usability of content: the knowledge contained in the content and the structure of the content itself determine the degree to which the knowledge is actionable by stakeholders. The usability is greatly influenced by the internal structure of the content, the writing and visualisation styles, and the transparency of any links to related knowledge elements. To design for usability of content, an understanding of the knowledge needs of stakeholders is required.

Maintainability of content: when new content is developed or new content sources come online, they needs to be integrated into the search system. A CTC&N Knowledge Management System should facilitate the incorporation of new sources.

Personalisation: the CTC&N Knowledge Management System should cater to the differences in knowledge needs of various stakeholders, by offering personalised views of the knowledge base. Personalisation need not be at the level of an individual, but could be, for example, at the level of a particular type of organisation, job role, or language.

Future-proof: a CTC&N Knowledge Management System should have an internal structure that caters to future developments, e.g. changing knowledge needs or changing sources of knowledge such as new databases or websites that need to be linked. Therefore, the overall system should be modular, open and allow for a separation of content and navigation structure(s).

Integration with existing knowledge sources and systems: a CTC&N Knowledge Management System should not be an island, only containing knowledge elements by itself but, ideally, should be a portal to external knowledge and resources.

Easy authoring/capture of knowledge elements and their validation. One of the most common complaints about knowledge management systems is the difficulty of actually publishing something on the system. A key requirement, therefore, is that the knowledge-authoring interface should be as easy as possible and be integrated into daily work practice of knowledge authors (this could e.g. be realised by back-end interfaces to existing tools that authors are used to, e.g. Word). Furthermore, the CTC&N

Knowledge Management System should support the validation of content by providing facilities for approval routing and release of new content.

Supporting the management of a variety of content types. A CTC&N Knowledge Management System should not only be able to manage textual content, but different formats (graphics, sound, moving images) as well.

Rights management. A CTC&N Knowledge Management Systems should have management facilities for setting CRUD (create/read/update/delete) rights for its own content.

These requirements are necessary but not sufficient conditions for an accepted and well-used facility to support knowledge management in the domain of climate change technology. The CTC&N will also need dedicated protocols that help develop, capture, validate, categorise and release knowledge elements.

The Knowledge Management System for CTC&N will consist of the following essential components:

- Software to manage support requests
- Software to search globally for existing knowledge sources that can help fulfil support requests to the CTC
- Software to enable interaction and collaboration among support requesters and knowledge providers
- Software to capture and disseminate knowledge resulting from fulfilled support requests
- Software to manage financial flows
- Software to provide operational reporting on CTC activities

The user bases for these system components can be mapped as follows:

		CTC	Network	Advisory Board	Requesters	General Public
1	Support Request Management System	x			x	
2	Search System	x	x	x	x	
3	Social Interaction System	x	x	x	x	
4	Knowledge Capture and Dissemination System	x		x	x	x
5	Grants Management System	x	x	x	x	
6	Management Information System	x		x		

The functionalities and technology options for each of the system components are profiled below, along with an overview of general requirements to be met by the knowledge management system as a whole.

4.2 Component 1: Managing Support Requests

4.2.1 What the system does

Professional management of support requests is essential to the success of the CTC&N. The CTC team will require software to streamline the support process, leading to lower resolution times and increased user satisfaction. There are several features that highlight the importance of this system to the CTC&N:

- CTC&N staff has access to a central knowledge base containing all of the CTC&N's historical data and requester information.
- CTC&N staff can search the entire knowledge base, including articles and previously closed support requests, for an answer by typing in relevant keywords or phrases. Requesters can seek answers to their questions without contacting a CTC&N staff member by searching the knowledge base.
- Requests can easily be created by both designated national contacts as well as CTC&N staff through the system's ticketing system
- When creating a request ticket, a requester can automatically be prompted to fill in required essential information regarding their request to expedite the support process
- Emails will be routed through the system first, so CTC&N staff will not have to worry about support requests mistakenly being marked as spam
- Automated responses can be emailed to requesters as soon as a request is received.
- Support tickets can automatically be created from emails.
- Support tickets can easily be created during a requester call by utilizing the software's search and auto-population features.
- Support issues can automatically or manually be assigned to a CTC&N staff member.
- CTC&N staff can easily view all of their open, closed, and pending support requests.
- CTC&N can monitor its performance and can also track their average response and resolution times.
- CTC&N can easily track what the most pertinent support issues are, allowing them to create new knowledge base articles that target clients' needs.
- Requesters can rate knowledge base articles, allowing CTC&N staff to improve confusing or unhelpful support articles.

4.2.2. Technology options for the system

There are several technology options for this system, many of which are open-source and very cost-effective. Tools such as HelpDeskPilot, Kayako Fusion or PerlDesk provide many of the required features out of the box and allow for incremental deployment, both in functionality as well as in number of users and volumes of requests to be handled.

4.3 Component 2: The Search System

4.3.1. What the system does

It is counterproductive to re-create, copy or reorganise existing, globally available content on climate change technologies. With a small number of staff this task would be enormous and one would be constantly facing problems of currency of information. Our proposed model depends on being able to retrieve climate change technology content from existing sources, where it is more easily kept up to date. In order to do this successfully it is useful to make a distinction between three types of content sources:

- Content held within the CTC&N and the wider DNV organisation
- Content that is publicly available through the web
- Content that is available through dedicated external datasets/databases

The first two types of content can be accessed through a federated search solution, in which multiple sources (network drives and websites) are crawled and indexed by the search system (making it different from a general Google Search). The third type of content requires a slightly different approach, as the indexing software won't be able to access those sources. What can be done for these datasets is for the CTC&N to negotiate an interface between the CTC&N search tool and the source (e.g. it could be agreed that the CTC&N search tool receives an index file periodically, to be included in the CTC&N's search facility. Content from this index file could be branded according to the wishes of the provider. Alternatively, a real-time interface could be programmed to be able to query the source and process the system's response).

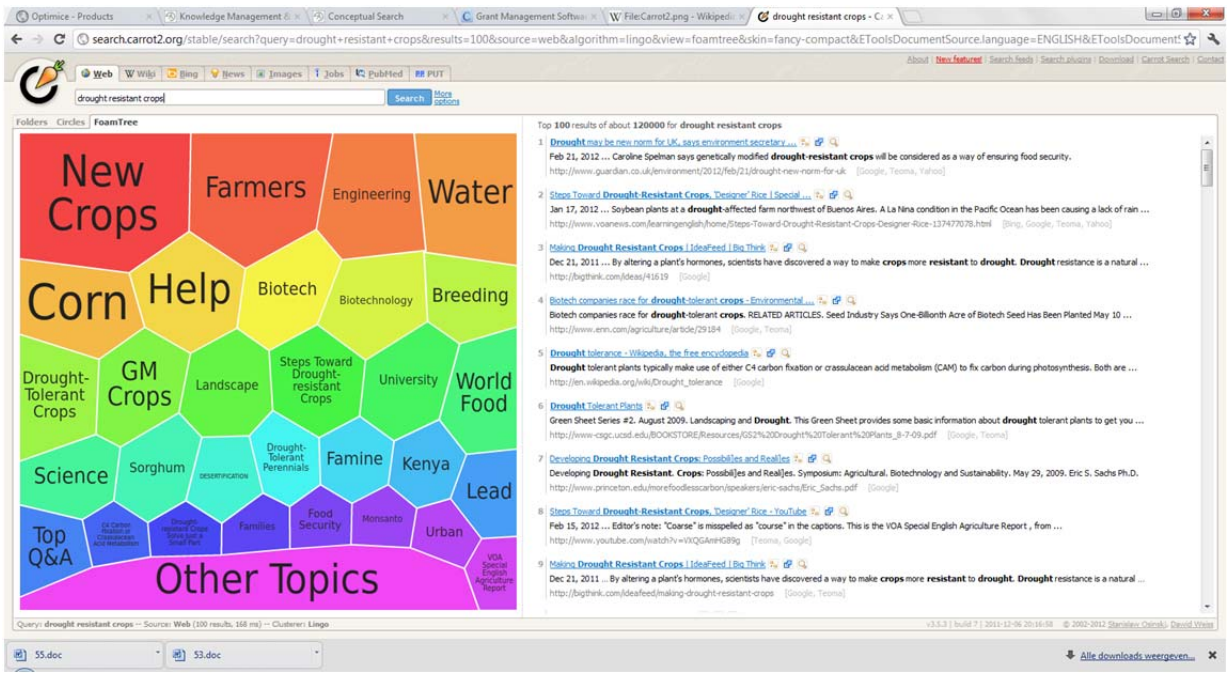
The search system can be further improved by expanding its semantic features. Conceptual search, where the user query is matched with conceptually related results (rather than literally related results) enhances the search experience. Clustering of results into meaningful groupings and relations (e.g. a search for drought-resistant crops could deliver a page that meaningfully groups research papers, researchers, projects, locations and images. Within the groupings, one could display related information items in turn). For an example, see the attached representative figure.

In DNV's experience, adding semantic features to the search system requires considerable work in creating a conceptual model of domain knowledge terms and their relationships. This is probably not practical from the outset of CTC&N's operations, and we propose to implement this aspect of the Knowledge Management system starting in its second year of operation. The choice to be made is whether to deploy an advanced tool for automatic clustering of related concepts and terms or whether to invest in manual development of semantic models.

4.3.2. Technology options for the system

In the open-source software community there are several strong search platforms that could be effectively deployed for the CTC: Lucene, Solr, and Sesame. The advantage of using open-source tools is that there are a vast number of programmers and many add-ons. An example of a search result clustering add-on to Solr (see figure below, results shown for a search on drought resistant crops. Please note that no specific, selected websites were indexed for this).

Extremely advanced is the Autonomy IDOL search suite. IDOL identifies the patterns that naturally occur in text, video or voice files based on the usage and frequency of terms that correspond to specific concepts. By studying the dominance of one pattern over another, IDOL can gauge the probability that the content in question deals with a specific subject. Amongst many features, IDOL can learn from user queries, can categorise content, can build knowledge taxonomies and can infer probabilistic conclusions from patterns discovered across various content sources. Autonomy sees search as not merely looking for a word, but looking for an idea. Therefore, although IDOL embraces traditional search methods such as keyword, Boolean, parametric and others in developing its search strategy, it relies on conceptual search based on computational pattern recognition and contextual linguistic analysis to deliver the most relevant results. Product pricing is in the USD $200K-1000K range, depending on a series of system parameters and negotiation results.



4.4 Component 3: Social Interaction and Network Mapping

4.4.1 What the system does

With the search system, the CTC&N can access content from existing internal and external web sources to be able to identify potential knowledge and knowledge providers to be matched with support requests. The CTC&N will also facilitate direct interaction between support requesters and knowledge providers by offering a community-based platform that allows for making connections, enabling discussions and supporting collaboration in climate change technology transfer. This system would contribute dramatically to the potential for capacity building across the CTC&N through the CTC&N's activities. To enable this, the CTC&N will deploy a social networking platform that provides tools to facilitate sharing ideas and raising questions within the overall community and thematic subgroups therein and discuss topics; both on line e.g. through audio or video conferencing and off-line e.g. through discussion forums. By blogging or micro-blogging (e.g. such as supported by the Twitter platform), or sharing of files, ideas can be exchanged quickly.

By creating social connections to individuals and group, community members can follow and provide feedback on contributions from connections. They will be able to connect with specific contacts using messaging, chatting, email, phone, video conference, etc.

Analysis of activities on the social network platform may provide insight in 'trending' topics and concerns. Activity may indicate which parts of the community interact frequently and which do not.

4.4.2 Technology options for the system

Initially, the community support function can be quickly set up via e.g. LinkedIn, Google+, Facebook or Yammer (there are currently no specific climate change technology groups). ThoughtFarmer or the Jive

Engage platform would be candidates for further professionalization of the community support function of the CTC&N. With Jive Engage, some of the helpdesk support functions are covered as well.

The community building effort is a key part of the CTC&N and would require considerable advocacy, moderation and support from CTC&N staff members, governed by a realistic community outreach programme of work.

4.5 Component 4: Knowledge Capture and Dissemination

4.5.1 What the system does

It is essential that the CTC&N captures the stories and lessons learned from the work it supports and disseminates those stories back to the request handling system as well as the social platform. This will leverage the investment in knowledge transfer to the wider community of requesters and other knowledge providers as well. The CTC&N will offer a toolbox to help requesters and knowledge providers to capture the narrative and insights gained in a multimedia way, combining video, audio and reporting and including the results.

4.5.2 Technology options for the system

Initially, stories from the first projects supported by the CTC&N can be easily disseminated through YouTube or Vimeo. Results can be disseminated via e.g. SlideShare. These channels are well-known in the developing world as DNV's experience has shown in work for e.g. http://www.cta.int/. As soon as the social interaction platform comes on stream, this could serve as an excellent dissemination vehicle for captured knowledge. Integration with the search function will allow for clustered retrieval of relevant video material in conjunction with other relevant content from worldwide indexed resources.

4.6 Component 5: Funding Management

4.6.1 What the system does

As the CTC&N is responsible for managing a portfolio of support projects and associated funding needs, it is essential that the funding streams are managed professionally, including support for funding application, tracking, payment, and reporting and interfacing with the knowledge capture and dissemination system.

4.6.2 Technology options for the system

There is a great variety of funding management software in the marketplace. The CTC&N will need to establish its preferred tool in the first months of its existence. A useful resource to support decision making is: http://www.capterra.com/grant-management-software

4.7 Component 6: Operational Reporting

4.7.1 What the system does

In order to feedback and report to the Advisory Board, the CTC&N will need to be able to retrieve management information from its systems. With the request handling system, the search system, the social interaction system and the grant management system, the CTC&N will have at its disposal a suite of tools that each offer components of the management information required. By collating the outputs of the

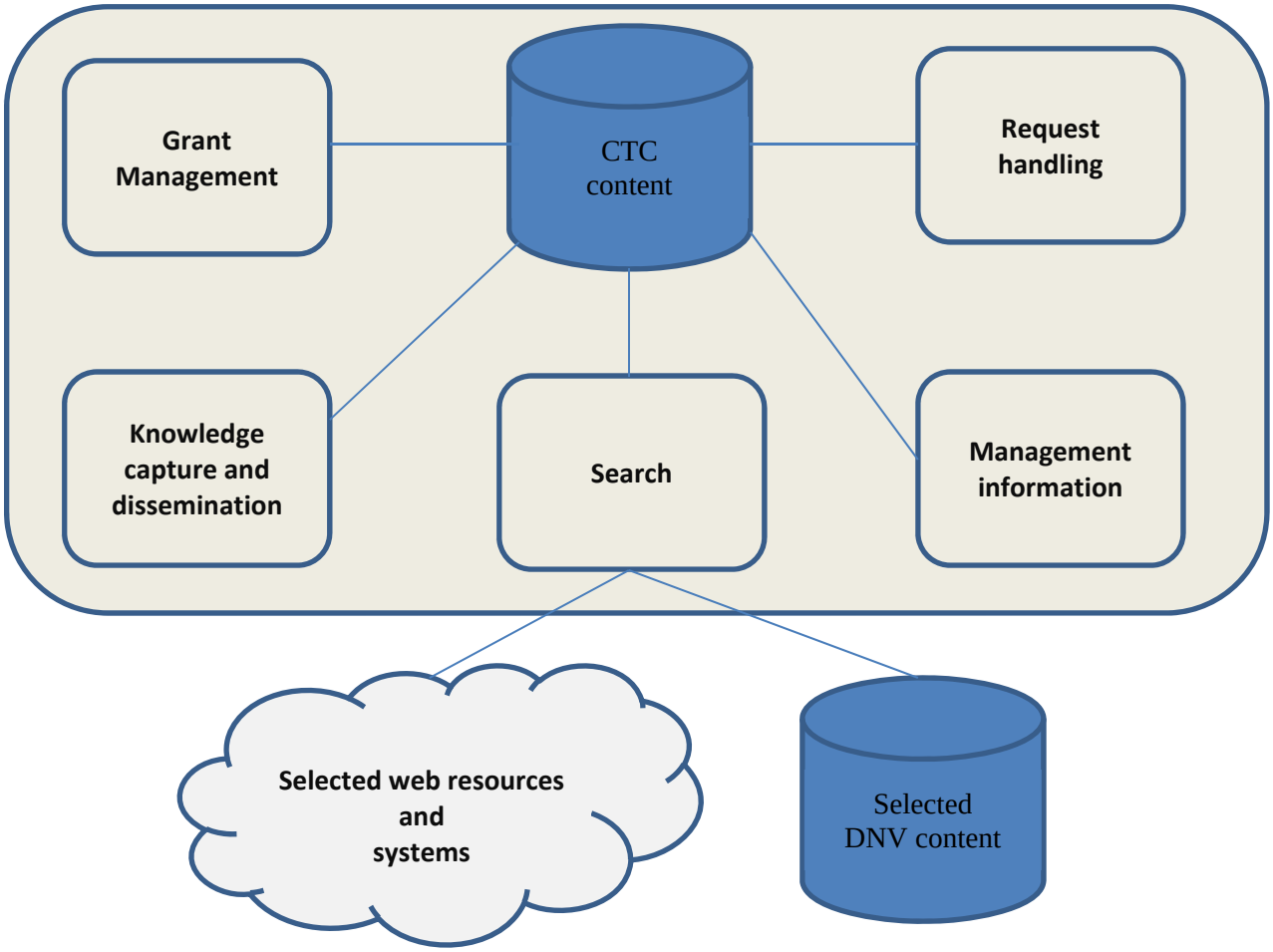
management information options of these systems, the CTC&N will be able to provide the Advisory Board with up to date information at any given time.

4.7.2 Technology options for the system

The management information from the various CTC&N systems can be pulled together on a password-protected webpage, allowing Advisory Board members to access the information at any time.

4.8 Assembling the Overall Architecture of CTC Knowledge Management

As the CTC&N Knowledge Management system is best served by a mix of tools specialized in delivering needed functionality, there must be an integration of these tools into an overall architecture that also allows for future development and expansion. The needed suite of tools can be brought together as depicted in the diagram below.

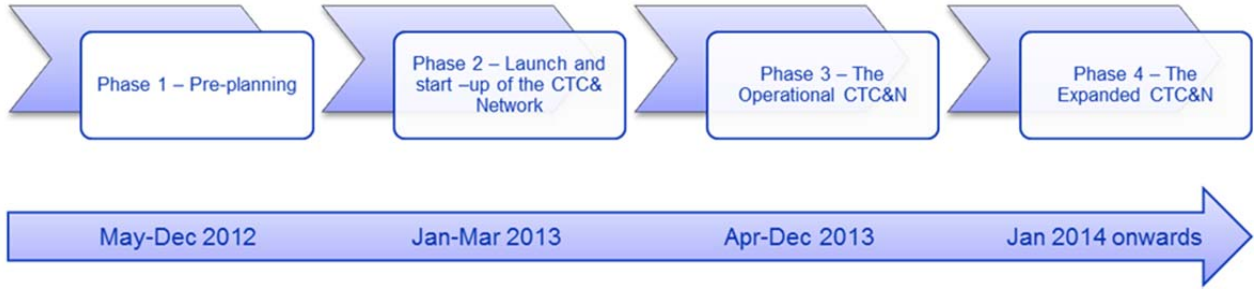


Integration of CTC system components in an intranet/extranet environment

As the CTC&N needs to come on stream quickly, we propose to roll-out the architecture incrementally in 3 phases. Version 1 would be available at start-up. Version 2 would be available within 12 months after initiation of the CTC. Version 3 is foreseen for the CTC's second year of operation.

		Phase 1	Phase 2	Phase 3
1	Support Request Management System	*Management of requests via Outlook procedures*	*Off-the-shelf helpdesk support system*	*Integration of support request system with search system and social interaction system, allowing for further self-help by requesters and community support to requesters*
2	Search System	*Use of generally available tools, e.g. Google*	*Lucene or Solr deployment*	*Additional semantic components*
3	Social Interaction System	*Set up of LinkedIn and Facebook groups*	*Deployment of social intranet*	*Community of communities platform based on social intranet*
4	Knowledge Capture and Dissemination System	*Interviews with proponents*	*Storytelling toolkit and video capture*	*CTC repository of good practice, lessons learned and success stories*
5	Grants Management System	*DNV project tracking and finance system*	*Off-the-shelf grants management system*	*Integration of grants management with other system components*
6	Management Information System	*Manual collation of information and Google Analytics*	*Management information from individual system components*	*Integrated management information dashboard*

ANNEX 5
START-UP SCHEDULE



	Task	Activities	Expected completion
Phase 1: Pre-planning	1	Recruitment of Director	16 November, 2012
	2	Securing DNV internal staff for core team	16 November 2012
Phase 2: Launch and Start-up	Staffing	Recruitment of external staff for additional competence and to replace interim staff	Ongoing through Month Three
		Additional core staff, including possibly regional hubs	End of Month Three
	Modalities and Procedures	Draft operational procedures for the CTC for finalization by Director covering products, services and partnerships	End of Month Three
		Draft organisational and governmance procedures	End of Month Two with approval end of Month Threer
		Draft project screening criteria and protocols	End of Month Two with approval end of Month Three
		Draft of interim guidelines for request submittal- based on scope agreed with Advisory Board-	End of Month Two with Approval end of Month Three
		Draft of strategic plan for first four years	End of Month Three
	Network & KM	Assessment of existing networks and activities to determine how best to structure the Netwrok and the Knowledge Management system (KM)	End of Month One

		Interface between CTC&N KM systems and UNFCCC systems such as TT:CLEAR will be examined in the design of the KM	End of Month One
		Construction of the KM	End of Month Two
		Assemble information on operations and outputs of other UNFCCC related architecture *inter alia* NAPAs, NAMAs, the Adaptation Committee, and MRVs for inclusion in the KM.	End of Month Two
		CTC outreach to technology focal points, beginning with LDCs and SIDs and expanding to remaining developing countries for input on Network Development	Ongoing
		CTC outreach to existing Networks	Ongoing
	Regional Hubs	Based on availability of funding, Regional Hubs will be established	Based on funding
Phase 3: Implementation of the CTC&N	1	Completion of any outstanding work on modalities and procedures	End of Month Four or in conjunction with Advisory Board schedule
	2	Draft of widened scope of work	End of Month Two, and in conjunction with Advisroy Board
	3	Monthly reports of requests for assistance	15th of the month, ongoing
	4	Annual report	In conjunction with TEC Annual report
	5	Continued development of Network	Ongoing
	6	Outreach to UNFCCC developing coutnry Parties	Ongoing
	7	Recruitment of additional staff including in hubs on an as needed basis	Ongoing

ANNEX 7
RESPONSE TO SAMPLE REQUESTS

Introduction and Comments to Samples

For purposes of this Annex it is assumed that the CTC&N will accept and act upon the two requests.

The general process diagram illustrating the how the CTC&N would manage incoming requests, including the sample requests, is provided in Annex 8. In it requests are handled internally, with limited expert support or with more extensive Network support. For larger requests requiring significant work beyond the time capacity or expertise of the core CTC&N staff, the CTC&N would need to turn to external resources and expertise, including:

1. Members of the Network,
2. DNV experts,
3. Other external expertise, from Network members to international consulting firms

In responding to the Sample Requests in this annex we have used two different approaches to illustrate both the "processing" of a request and the scoping of a project based on technical knowledge within the CTC&N.

In request No. 1 we offer a solution to the request and a price for the project. In request 2 we illustrate how the process would be utilised in responding to a request, and at what stages the Network would be involved, indications of the time expected to be used, and the internal cost of processing a request of the kind covered in the samples.

In the case of the first Sample Request, we have assumed that the CTC&N would turn to expertise within DNV, in this case DNV KEMA Energy and Sustainability, to efficiently and quickly work with the CTC Network to deliver a substantive response to the request.

In the case of the second Sample Request, we have assumed that the CTC&N would play only the role of project manager and coordinator, and would turn to the Network for most the majority of support in implementing the response. The two models used illustrate both the process and the substance of how the CTC&N would manage the requests.

The requests received by the CTC&N can potentially vary from very simple to quite complex projects. Some requests may require projects of the scale such that they are better served in existing institutions and funding sources like the World Bank and the GEF. CTC&N may play an advisory role in routing requests to other institutions that may be better placed to manage them.

Sample Request No 1

An "in-house" solution to the request

Country X has requested assistance in the preparation and implementation of a national energy programme (NEP) to increase the national energy supply capacity by 800 MWe, with a minimum of 50% from renewable energy sources (RES).

Information provided:

- The installed power generation capacity is relatively high
- The growth rate in energy consumption is higher than the domestic product growth rate which leads to a need for increased energy supply
- Energy sector contributes 70% of total greenhouse gas emissions
- Air pollution issues from fossil fuel
- Droughts limit the use of hydropower
- 60% of power is from coal and natural gas, 30% from hydropower, 10 % RES
- Investment in RES to reduce GHG from a business as usual scenario
- Will introduce renewable purchase obligation

Energy Policy and the National Energy Programme (NEP)

The energy policy and the NEP need to be aligned, and they have links with other policies such as rural development, economic development, water policy, forestry and agriculture and environmental policies. The NEP has added value and is likely to be more successful when links with adjacent policies are made.

Items in the national energy policy which have to be verified and updated as part of the NEP work are:

- Development of energy demand, including geographical distribution and sector demand
- Lifetime and expected use of existing power capacity
- Possibilities to import and export power
- Power market organization, power pricing and governmental involvement (subsidies)
- Power resources portfolio, ratio between RES and fossil fuels
- Power related infrastructure like education and infrastructure maintenance.

The NEP is part of a bigger picture and has to fit it the overall energy policy of Country X.

National Energy Programme

The NEP will facilitate the transition towards low GHG emission power production and assist the country in meeting future energy demands in a reliable and cost effective way. Currently, fossil fuels and hydro power are the major sources for power generation. The NEP, with a 10 year action plan and a 20-year outlook will indicate the goals of the transition to a lower carbon economy, the strategy plan for optimal implementation for authorities and opportunities for participation and benefits for market stakeholders. New energy resources like solar power, bio-energy and wind power will be added.

The NEP as stated in the sample request focuses only on power. The country would be asked by the CTC&N, however, if they would consider expanding the scope to include controlling energy demand growth as this is as important as developing energy supply capacity. This would capture energy efficiency and optimal use of energy in households and SMEs.

Co-benefits of the various options should also be considered in the NEP. Reducing the amount of coal used can, in addition to CO_2 emissions reduction, reduce a number of other pollutants such as NOx, SOx, mercury and particulate matter. Increased energy security, cost savings, use of local resources and reduced transmission network requirements are all issues that should be considered when developing the NEP.

The NEP is a fundamental shift from the "business as usual" baseline where RES will be the prominent energy source, with fossil power filling in the gaps.

A Two-Step Method:

1. **Second generation fossil power**

The first step is to shift from first to second generation fossil power production. If possible, the use of natural gas is promoted, as this offers the highest efficiency, lowest carbon footprint and lowest environmental burden, and a low capital expenditure compared to coal fired power plants.

Natural gas power plants can be operated in flexible combined heat and power (CHP) mode, delivering cheap heat to industry and further reducing the carbon footprint. Eight units, from 20 to 100 MWe in size, with a total installed capacity of 300 to 400 MWe can serve the energy needs of Country X's cities. Typical locations for these units are new industrial areas as the reliable power and heat attracts industry.

Existing coal fired power plants will be retrofitted to multi-fuel plants capable of using biomass residues as fuel. Typically 10 to 30% of coal can be replaced by alternative fuel sources. In general, this is the cheapest bio-energy option since existing infrastructure is used. In this way two existing coal fired power plants will be transferred to co-firing mode offering a bio-energy capacity of 100 MWe. New coal fired power plants are not part of the NEP, since an optimal power plant size is at least 500 MWe, which is too big for the NEP which focuses on investing in renewables.

2. **RES Potential**

A RES potential survey is performed to determine the RES potential in the various locations in the country (MWe, full load hours, supply patterns). Much of the potential is unlikely to be used within the 10 year NEP timeframe. For example geothermal heat is available for power production, but is located too far outside the national grid to consider this as a serious option. Estimating RES potential is generally difficult due to severe lack of data. For example, in many developing countries there is very little data, if any, on wind speed measurements at a 50 m height for the entire country, or statistical data on agricultural and forestry residue amounts and their geographical distribution. Options will have to be evaluated using other means, such as direct measuring.

RES potential monitoring is set up, and together with stakeholders high RES potential locations are identified for launching first projects. This market development approach is a mix of central RES power connected to the grid and decentralized power serving needs in rural areas.

The NEP aim is to demonstrate on a commercial scale all the RES resources which are of strategic importance in the long run for Country X. Potential RES resources include:

- A stand-alone biomass combustion plant in an agricultural part of the country producing both power and heat for agro industry and small cities.
    - Typical size of 5 to 20 MWe.
    - Fuel examples: forestry residue, palm, cocoa, sugar cane, rice and rubber tree residue and straw.
- Co-digestion using wet biomass residue for the production of power by means of a gas engine and the use of bio-oil (Jatropha and/or waste vegetable oil) in diesel engines.
- Waste-to-energy, especially in big cities where landfill gas is used for power production or even better landfills are replaced by waste-to-energy plants.
- Wind power, especially in coastal, mountain and some desert areas may offer a huge potential. A few onshore wind power plants based on 2 to 3 MWe wind turbines, with a total capacity ranging from 20 to 100 MWe, will demonstrate wind energy possibilities. Offshore wind power might be a long term option.
- Solar power for small scale decentralized applications (< 1 kWe peak) and for mid-scale grid connected applications solar PV (up to 50 MWe).
- Concentrated Solar Power (CSP) offers the lowest power cost for large scale applications; energy storage is possible, facilitating the integration with gas fired power plants. In this way CSP, like bio-energy, offers the opportunity to balance power supply and demand
- Existing hydro power capacity can also be used for power balancing instead of base load power production.
- Existing hydro plants can be converted to pumped storage hydro.

National Energy Programme Highlights

The NEP is not only about identifying the new power capacity. Other items like price setting, governmental support, power balancing, grid extension, energy efficiency and the way existing power capacity is used have to be addressed too.

Highlights of the 800 MWe National Energy Programme:

New mid-size (20 to 100 MWe) natural gas fired CHP are planned	300 to 400 MWe
Two existing coal fired plants are transformed to biomass co-firing	100 MWe RES
Stand-alone biomass fired power plants (2)	45 MWe
Waste-to-energy plant in a big city	20 MWe
Recovering landfill gas at big landfills (2)	5 MWe
Onshore wind power plants (3)	150 to 200 MWe
Centralized solar power, PV or CSP (2)	150 to 200 MWe
Decentralized solar power, PV (many)	20 MWe
Decentralized bio power based on biogas and bio-oil (20)	10 MWe
Total New Power Capacity:	300 to 400 MWe Fossil 400 to 500 MWe RES

Other highlights of the NEP include shifting existing hydropower from base load generation to system balancing operations, and no expansion of coal fired power capacity or large scale hydro power.

Use of sophisticated optimisation software is recommended to find the least cost solution for power supply. If the share of RES is high compared to the load the technical integration becomes crucial in order to ensure a reliable and stable supply. Sufficient flexibility of conventional power plants and enough regulating and reserve capacity needs to be secured. In this respect existing hydro capacity will be useful and conversion of a portion of existing hydro capacity should be considered since studies show that with a growing fraction of total RES, it may be necessary under some circumstances to curtail some RES supply in order to maintain reliable supplies. Integration costs will influence the optimum mix of power supply options.

Power Market

The 800 MWe capacity growth requires an investment volume in the range of 2 to 3 billion Euro. Assuming that investments are not done by the government, and knowing that third parties are capable of realizing new capacity in a sound way, the power market must be liberalized while also well regulated. Investors in new capacity must be sure that connection to the grid is possible and that the grid is reliable enough for continuous off take from their generation facilities.

In this respect it is important to note that increasing shares of RES will influence market operations and may require additional measures to ensure a good working market for both RES and conventional capacity. For example in Western Europe the present energy market may need to be supplemented with some kind of capacity mechanism to ensure sufficient remuneration for power plants to attract new investment.

Investors must also have a clear picture of how licenses to build and operate can be obtained. A governmental office facilitating this process would be of great help. Finally it has to be clear what the floor price of power will be over the medium term (at least 10 years) and how this floor (key to rate of return calculations for investors) is guaranteed by the government. In the end it is all about confidence in the market. Organizing the NEP in a sound way combined with power market related legislation offering room for third parties to invest is crucial for the success of the 800 MWe programme.

The required annual growth rate will be an important issue of the NEP and greatly depends on the actual expected growth of the power demand. We assumed a growth rate of 80 MWe a year over a period of 10 years. If demand increases above this rate, more "easy to realize" power capacity must be planned; therefore the NEP will include scenarios on different demand growth rates. The NEP must also include scenarios covering various growth rates for RES in the event the preferred scenario with > 50% RES cannot be executed according to plan.

Optimum Tariff Premium

Promoting RES can be done in several ways. Where conditions for increasing RES are excellent and fossil based alternatives are expensive, this can be easily achieved. The cost of RES options such as solar PV is dropping and getting closer to wholesale electricity prices. NEP will need to focus on these profitable break-even opportunities, where additional incentives are not necessary.

When financial support is necessary an investment subsidy, a guaranteed feed-in tariff, or a more flexible kWhe premium can be used. A uniform tariff premium is sufficient in new, start-up markets. This is the simplest system, but not very cost effective over the long run. It is more common to develop a premium system with a premium per RES type. The market will need clarity on what the feed-in tariff will be over a > 10 year period. In this way, the market can assess feasibility and risks in a proper way. By comparing the different RES promotion systems worldwide, and taking into account the specific situation in Country X, the best promotion system can be selected, followed by setting tariffs.

A point of attention for many African countries is fossil fuel power subsidies. A preferred method for increasing RES is to lower subsidies to 0, and use the freed-up budget for RES promotion, especially when energy demand growth is rapid and general energy subsidies are a potential threat to the national budget. When greater promotion is placed on RES, a tax on fossil fuel can be considered making fossil power more expensive than RES power.

Renewable purchase obligation requirement

For large scale grid connected RES it is essential that access to the grid is guaranteed. Also it has to be clear who will invest in the grid connection, either the RES project owner or the grid owner. Finally a renewable purchase obligation has to be in place, including a guarantee or a transparent system on the feed-in tariff. In some African countries, third party access is regulated by law and that the national power company is obliged to connect and buy the electricity. But if the feed-in tariff is unregulated, the offered price per kWhe might be (and has in some cases been) zero! RES project situations occur where feed-in tariffs are less relevant, for example bio-energy projects in industries producing power for their own internal consumption.

Management and implementation plan

Managing a NEP requires governmental commitment at the highest level, because setting up a NEP is likely to impact a range of associated policy areas. Formally, the Minister of Energy and Mines (MEM), or more generally the ministry responsible for energy is the project owner.

CTC&N will form a project team together with MEM officials. The skills needed in the project team are:

- market and regulation,
- power production (RES and fossil),
- grid operations,
- power cost and support schemes,
- national planning,
- marketing and business promotion.

Important expertise is likely to be needed in the areas of solar, wind and bio-energy. Working together with members of the CTC Network, including independent local organizations like universities, energy centres, rural development organizations, the work can be carried out in a sustainable manner. Finally, it is important to work with crucial stakeholders from an early stage, including the national or local power companies, potential investors, and the national bank. The NEP has to be in line with their needs and way of operation in order to be successful.

Activity plan and budget indication

An overview of activities related to establishing the 800 MWe NEP are presented in the table below. The activities are divided between the CTC&N and the Ministry of Energy and Mines (MEM). Indication of the overall cost to be incurred by CTC&N, including use of the CTC&N) is approximately USD 750,000. These costs would be roughly allocated as follows:

1	CTC&N core staff activities	5-10% of budget
2	DNV KEMA project execution	40-70%
3	Network resources and expertise	20-55%

Activities are divided in four parts:

- Setting up NEP, including subsidy scheme, lead time 10 months, step 1 to 9 below
- Changes in market and regulations, depending on local situation, up to 1 year, steps 10, 11
- Promoting NEP, lead time 4 months, step 12
- Implementing the NEP, 10 years or shorter depending on energy growth rate.

Table 1 Activity plan 800 MWe National Energy Programme (i.c.w. = in cooperation with)

Step	Activity	Owner	Lead time	Cost USD
1	Review existing policy, energy plan	CTC&N i.c.w. MEM	2 weeks	25,000
2	Outlining NEP headlines	CTC&N i.c.w. MEM	2 weeks	25,000
3	Energy and RES data mining	CTC&N, i.c.w. Ministries	4 weeks	25,000
4.	RES potential study	CTC&N i.c.w. MEM	8 weeks	50,000
5	RES roadmap and RES projects	CTC&N i.c.w. MEM	4 weeks	37,000
6	Set up NEP scenario's	CTC&N i.c.w. MEM	3 weeks	25,000
7	Developing RES subsidy scheme	CTC&N i.c.w. MEM	8 weeks	40,000
8	Establishing of local NEP office	MEM i.c.w. CTC&N	8 weeks	13,000
9	Development NEP bidbook	CTC&N i.c.w. MEM	6 weeks	40,000
10	Updating market and regulations	CTC&N i.c.w. MEM	Up to 1 year	65,000
11	NEP adoption	MEM		
12	NEP market promotion	MEM i.c.w. CTC&N	8 weeks	40,000
13	RES Project evaluation	CTC&N i.c.w. MEM	Up to 5 years	130,000
14	RES project support and review	CTC&N i.c.w. MEM	Up to 10 years	130,000
15	Monitoring and NEP evaluation	CTC&N i.c.w. MEM	4 months	65,000

Background information

The sample project approach described here is based on DNV KEMA's experience (2009) with the development of a renewable energy strategy for North and South Sudan. The strategy included energy market regulations, de-bottlenecking, setting-up of large scale RES plants, decentralized power, centralized power combined with power grid development and finally cost/benefits of the RES transition.

Sample Request 2
Utilising the Network

Request: Country Y has requested assistance in developing a strategy for crop research for the development of drought-resistant crops, including ideas for engaging national, regional and international institutions to meet the demands for coping with worsening drought conditions caused by climate change and the possibility for undertaking joint research and development with agricultural research institutions in developing countries.

The process by which the CTC&N would respond to this proposal is illustrated in the process review diagram as discussed in Section 4 of the proposal. The process would initially ensure that the context, limitations, and intentions of the request are clear.

Information provided and assumptions made:

- Average rainfall< 800 mm/ yr
- Rainfall variability limiting factor
- Rain-fed food production
- Demand for new varieties of crops to meet changes in climate
- Has a functioning, but resource and competence limited, agricultural research institute
- There is a need to partner with other institutions
- There is a need to engage national, regional and international institutions

CTC&N assumptions based on the information provided:

- The crop development is to meet the food needs of small farmers, and the request focuses on drought resistant varieties of crops that have a potential to grow in areas with limited rainfall such as sorghum, pearl millet, chickpea, pigeon pea, groundnut, maize, cassava, beans and upland rice crops(depending on the country).
- Irrigation as such is not the main focus of the request, but water management practices and knowledge transfer of farming practices are important considerations.
- The underlying motivation of the project is to increase the resilience of vulnerable dryland communities to future droughts. This includes measures like drought-tolerant crops, while also linking smallholder farmers and herders with research knowledge, products and innovations including better uses of land, water and other natural resources.
- The strategy development will include women in agriculture and poverty reduction as central elements

The focus is assumed to be on seeds and production improvement for small farmers. The country's laws and policies on genetically modified organisms would need to be known. The assumption that the research is not oriented towards larger scale cash crops would need to be verified.

Step 1: A CTC&N Project Manager is assigned to the request

Step 2: Ensure that the request meets qualification criteria, and that funding is available

All requests will be registered in the request database. They will first go through an initial screening to ensure that the request meets the qualification standards set for projects for consideration. This will include a check-list of predefined points that have been agreed upon with the Advisory Board. If the outcome of the initial screening is positive, then a budget availability review will be performed.

If the request cannot be accepted due to budgetary constraints it will be placed in a pool of projects "waiting for funding". This pool will be used by the Director and the CTC to solicit additional funding for such projects.

This step does not ensure that the project will be accepted and implemented. It simply ensures that the project qualifies for potential CTC support.

Step 3: Access Network and Knowledge Management System

All requests will be screened through the Knowledge Management System to screen for similar requests and projects (inside and outside of CTC&N). This facilitates both the identification of knowledgeable networks, projects that can be useful for looking at similar solutions, and ensures that this project will not duplicate already on-going efforts.

There are a number of institutes and networks working on drought resistant plants. Crop research is an area where the time from research results to improved production on the field can be very long, and it is important that the strategy maximize the use of already on-going work around the world. In this case, for example, the CTC&N Project Manager would draw upon resources such as agricultural research and resource networks at global and regional levels. The types of organisations that would be contacted as part of network development on this project include:

- The Consultative Group for International Agricultural Research (CGIAR)
- International Service for the Acquisition of Agri-biotech Applications (ISAAA)
- International Centre for Tropical Agriculture (CIAT)
- The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
- The International Centre of Agriculture Research in the Dry Areas (ICARDA)
- Alliance for a Green Revolution in Africa (AGRA)
- EMBRAPA
- The DROPS Consortium (Institut National de la Recherché Agronomique (INRA) of France)
- Kenya agriculture Research Institute, KARI,
- The National Crops Resources Research Institute at Namulonge, Uganda
- Mexico-based International Maize and Wheat Improvement Centre (CIMMYT)

During this step the CTC&N Project Manager will actively access relevant members of the CTC Network.

Step 4: Development of Tentative Project Plan, and Management Approval

The needs of the host country in relation to current capacity will be mapped and the gaps will determine what type of cooperative research programme will be proposed. A tentative work-plan, budget and feasibility of the project will be produced by the project manager.

The CTC&N's proposed project plan will be submitted to and approved by management to ensure consistency with CTC&N priorities and budget availability.

Step 5: Final Project Implementation Plan Development and Approval

Assuming approval of the tentative plan, a full plan with performance indicators will be developed by the project manager. The plan will seek to ensure that needed expertise, to the extent possible, comes from the region, including experts from the country requesting support.

If external tendering is required as part of the project the Project Manager will conduct the tendering process.

Step 6: Project Implementation

The project team has now been set up by the Project Manager, including members of the CTC Network or other networks. The project team develops a research strategy for Country Y based on needs and current knowledge and the identified possibilities for joint research projects.

The strategy will be based on the possibilities of cooperating with relevant initiatives within drought resistant crops, which could be focused on various stages, such as trialling new seeds, competence transfer of growing techniques and country based outreach programs. The strategy will also include financing possibilities for various stages, and how to build up the competence in the existing agriculture research institute.

The joint team develops a strategy implementation document that includes long-term partnerships, funding opportunities, policy development needs, and milestones to guide and evaluate progress.

The project progress is reported every month to the CTC&N project manager.

Step 7: CTC&N Review and Final Delivery

When the project is finished a draft solutions document is sent to the CTC&N by whatever individual or group has implemented the project.

If appropriate for the scope of the project, the Draft Solutions Document is circulated for external review. After the external review and corrections there is an internal CTC&N review.

Once complete the final reporting document is then posted on the CTC&N project website and the lessons captured in the knowledge management system.

Time and Budget Overview

The table below outlines the various activities and the person days anticipated to be used for a request like this one once the system is up and running. The first requests through the system will take more time. The costs are indicative, and are generally covered as operating costs of the CTC&N. Other costs are external verification, eventual outsourcing of work plan development, and implementation of the project itself.

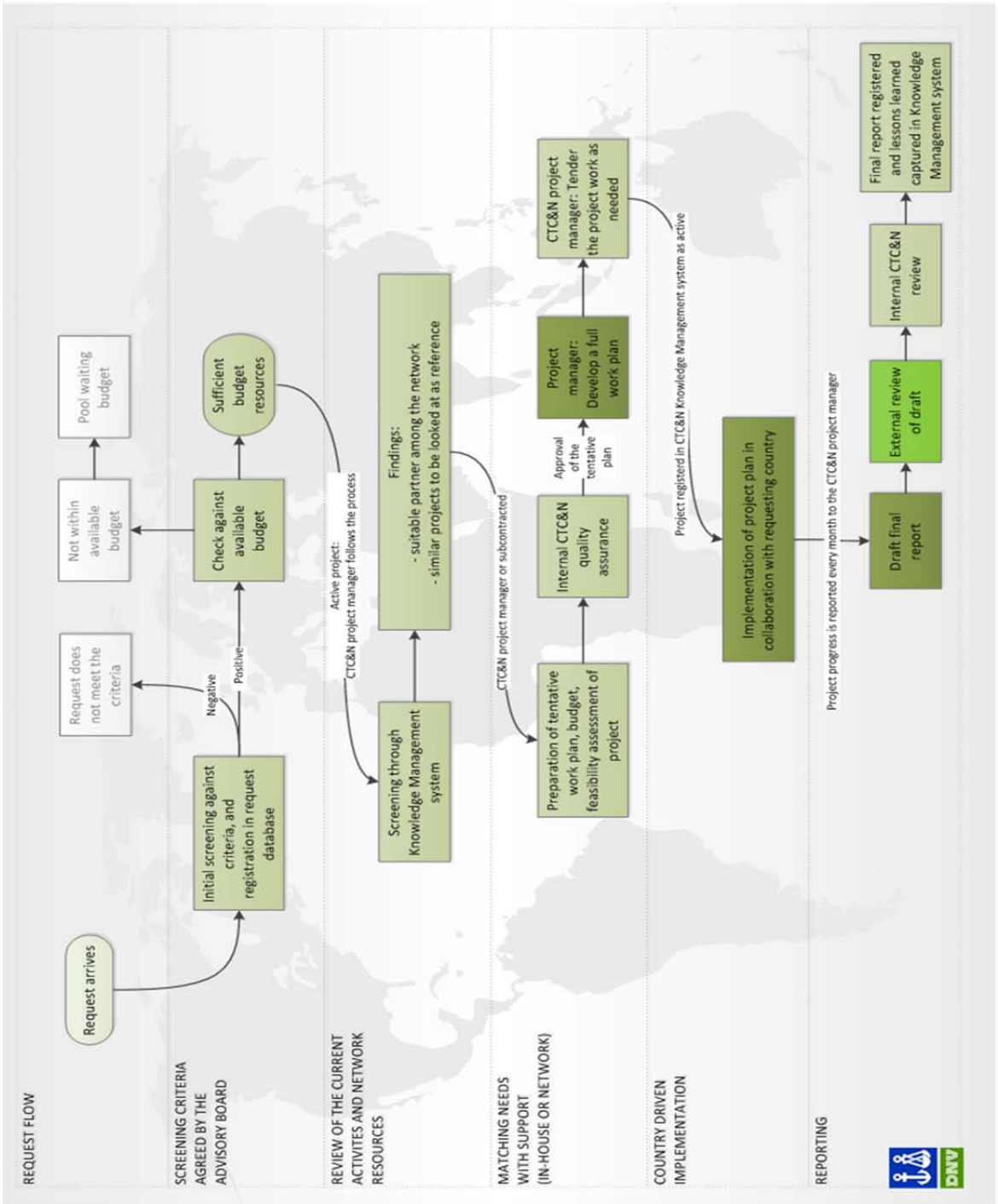
Table 4 Activities and indicative costs of processing the sample request
PM= project manager; DO _ directors office;

Step	Activity	Responsible	Time Available in Process Chart	Expected person days for sample project	$ Cost
1	Screening request Register in database	PM	1 week	0,5	750
2	Review of current activities in management system and network	PM	2 weeks	1	1500
3	Feasibility evaluation	PM			0
	Develop tentative work plan and budget	PM	1 week	1	1500
	Check-in review directors office	PM DO	2 days	0,5	750
4	Full work plan w/ indicators	PM	2 weeks	2	3000
	Tendering via network or others/ contract	PM	2 weeks	1	1500
	Final Expenditure approval	DO	1 week	0,5	750
	Project implementation	Network	1-6 months		Variable
	Monthly reporting	PM PM		0,5/month	4500
6	Draft solutions document :external review	TPT External reviewer	1 week	2	3000
	Internal review	Internal QA	1 week	1	1500
	Final statement and posting in database	CTC PM	1 week	1	1500
				13,5	20250


DNV

ANNEX

8
PROCESS MAP




DNV

ANNEX

9
PAST ACTIVITIES AND REFERENCES

	The European Carbon Capture and Storage Demonstration Project Network (ccsnetwork.eu)
Names of the main partners/participants of the activity	DNV
Start and end dates of the activity	1.1.09-31-12-11
Country or region that the activity took place	Europe (Belgium, Netherlands, United Kingdom, Spain, Italy, Germany, Poland, Norway)
Organizations received services/supports through the activity	The European Commission, CCS Project Developers, International CCS Research Community, Regulators, NGOs
Local partners/participants involved in this activity	Mijnlieff ICT Consultancy (The Netherlands), Iris Design (The Netherlands)
Financial scale of the activity	3 Million Euros
Activity components	1. Designing and realising a governance structure and knowledge sharing protocols for a knowledge sharing network in a developing technology field (carbon capture and storage) 2. Designing and realising a knowledge management system consisting of a protected social networking website, document management system, newsletter distribution system, topical issues tracker and an open knowledge dissemination website. Furthermore, a dedicated knowledge capture tool was developed to draw in new knowledge from projects periodically 3. Design, facilitation and reporting of dedicated knowledge sharing events 4. Active dissemination of knowledge developed at international fora
Main achievements of the activity	Establishment of a unique knowledge sharing network of CCS demonstration projects, with an establishing set of ways of working, tangible knowledge assets as outputs, supported by a fit for purpose knowledge sharing infrastructure, with targeted knowledge dissemination channels to the network's external stakeholders

References: Name and contact	Client contact details Directorate-General for Energy (DG ENER) Unit B3 - Coal and Oil European Commission B-1049 Brussels Belgium +32 2 299 11 11 Simon Bennett Simon.Bennett@ec.europa.eu

	Renewable Energy Strategy for Sudan
Names of the main partners/participants of the activity	KEMA
Start and end dates of the activity	Start date 16 March 2009, end date 20 November 2009
Country or region that the activity took place	North Sudan and South Sudan
Organizations received services/supports through the activity	Ministry of Foreign Affairs the Netherlands, Ministry of Energy and Mines North Sudan, Ministry of Energy and Mines South Sudan
Local partners/participants involved in this activity	Local partner Mr. Ahmed Hassan Hood, independent energy consultant in Khartoum Local participants 38 persons coming from ministries, institutes, NGO's, universities and energy companies
Financial scale of the activity	Budget 85,925 Euro excl. VAT
Activity components	Desk research, field survey, interviews, lectures, reporting, see also content report
Main achievements of the activity	RES strategy for both North and South Sudan, RES potential identification, knowledge transfer, short term action plan, see also summary report
References: Name and contact	References: mr. Cloin Ministry of foreign affairs the Netherlands, mrs. Igbal Ahmed Director Renewable Energy Ministry of Energy and Mines North Sudan, mr. Arkangelo Okwang Director General Directorate Energy South Sudan Contact details references (J): Mrs. Igbal Ahmed: iahmed222@hotmail.com, tel. +249 183 766083 Mr. Ahmed Hassan Hood: ahmdhood@yahoo.com, tel. +249 122024909

	Mr. Arkangelo Okwang: archangelouk@yahoo.co.uk, tel. +249 918193449 Mr. Cloin: : jan.cloin@minbuza.nl, tel. +31 703486414

	Norwegian NOx fund
Names of the main partners/participants of the activity	The Confederation of Norwegian Enterprise (in Norwegian Næringslivets Hovedorganisasjon; NHO), DNV
Start and end dates of the activity	May 2008 - 2012
Country or region that the activity took place	Norway
Organizations received services/supports through the activity	14 business sector organisations.
Local partners/participants involved in this activity	NHO, partners above, The Norwegian Pollution Control Authority
Financial scale of the activity	600 000 EUR for DNV (fund itself is 650 MNOK year)
Activity components	Technical tasks: ▪ Established application guidelines for web distribution ▪ Established overview over qualified system suppliers ▪ QA-work and evaluation of 300 NOx-measurements carried out in '08 ▪ Established a database with emission data for all members (>800 ships and 25 land based industries). ▪ Review and evaluate emission data ▪ Technical review of all incoming applications for support to abatement initiatives, > 570 applications per date ▪ Assisting Administration with preparing documents to Board meeting ▪ Participation in monthly Board meetings ▪ Verification of completed installations and operational measures (40%) ▪ Participation in Norwegian official secretariat for reporting total NOx reductions

Main achievements of the activity	The Business Sector's NOx Fund stimulates to increased competition and capacity within the NOx solutions market and spread information on promising technologies. Capacity barriers may thus be identified and measures suggested. Interaction and collaboration with Government Incentives are vital (Innovation Norway and the Research Council of Norway).
References: Name and contact	Geir Høibye geir.hoibye@nox-fondet.no tlf(+47) 23 08 82 98 / 93 06 25 30 Postboks 5250 Majorstuen, 0303 Oslo Norway http://www.nho.no/the-nox-fund/category477.html

DNV has been part of a number of studies for IMO. This is one example.	**IMO *Study of Greenhouse Gas Emissions from Ships***
Names of the main partners/participants of the activity	Marintek, CE Delft, Dalian Maritime University, Deutsches Zentrum für Luft- und Raumfahrt e.V., DNV, Energy and Environmental Research Associates (EERA), Lloyd's Register – Fairplay, Manchester Metropolitan University, Mokpo National Maritime University (MNMU), National Maritime Research Institute (Japan), Ocean Policy Research Foundation (OPRF).
Start and end dates of the activity	2009
Country or region that the activity took place	Global activity
Organizations received services/supports through the activity Local partners/participants involved in this activity	the International Energy Agency (IEA), the Baltic and International Maritime Council (BIMCO), the International Association of Independent Tanker Owners (INTERTANKO), the Government of Australia, the Government of Greece and the IMO secretariat
Financial scale of the activity	Total $400 000 (DNV $57 000)
Activity components / Main achievements of the	assessed: (i) present and future emissions from international shipping; (ii) the potential for reduction of

activity	these emissions through technology and policy; and (iii) impacts on climate from these emissions.
References: Name and contact	Mr. Eivind S. Vagslid, Head of IMO's Chemical and Air Pollution Prevention Section evagslid@imo.org +442075873137


DNV

ANNEX

10
AUDITED FINANCIAL REPORTS

In the following, the Auditor Reports, found in the Annuals Reports, for the last three years are presented.

Auditor Report - 2010

TO THE BOARD OF DIRECTORS OF STIFTELSEN DET NORSKE VERITAS

We have audited the accompanying financial statements of Stiftelsen Det Norske Veritas, comprising the financial statements for the Foundation and the Group. The financial statements for the Foundation and the Group comprise the balance sheet as at 31 December 2010, the statements of income and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information.

THE BOARD OF DIRECTORS' AND CHIEF EXECUTIVE OFFICER'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS. The Board of Directors and Chief Executive Officer are responsible for the preparation and fair presentation of these financial statements in accordance with the Norwegian Accounting Act and accounting standards and practices generally accepted in Norway, and for such internal control as the Board of Directors and Chief Executive Officer determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY. Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with laws, regulations, and auditing standards and practices generally accepted in Norway, including International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the financial statements for the Foundation and the Group.

OPINION. In our opinion, the financial statements of Stiftelsen Det Norske Veritas have been prepared in accordance with laws and regulations and present fairly, in all material respects, the financial position of the Foundation and the Group as of 31 December 2010 and their financial performance and cash flows for the year then ended in accordance with the Norwegian Accounting Act and accounting standards and practices generally accepted in Norway.

Report on other legal and regulatory requirements

OPINION ON THE BOARD OF DIRECTORS' REPORT. Based on our audit of the financial statements as described above, it is our opinion that the information presented in the Directors' report concerning the financial statements, the going concern assumption and the proposal for the allocation of the result is consistent with the financial statements and complies with the law and regulations.

OPINION ON REGISTRATION AND DOCUMENTATION. Based on our audit of the financial statements as described above, and control procedures we have considered necessary in accordance with the international standard on assurance engagements (ISAE) 3000, «Assurance Engagements Other than Audits or Reviews of Historical Financial Information», it is our opinion that the Board of Directors and Chief Executive Officer have fulfilled their duty to properly record and document the Foundation accounting information as required by law and generally accepted bookkeeping practice in Norway.

OPINION ON ASSET MANAGEMENT. Based on our audit of the financial statements as described above and control procedures we have considered necessary in accordance with the international standard on assurance engagements (ISAE) 3000, it is our opinion that the Foundation has been managed in accordance with laws and the foundation's objectives and articles of association.

Oslo, 5 April 2011
ERNST & YOUNG AS

Finn Ole Edstrøm
State Authorised Public Accountant (Norway)

Auditor Report – 2009

TO THE BOARD OF DIRECTORS OF STIFTELSEN DET NORSKE VERITAS

We have audited the annual financial statements of Stiftelsen Det Norske Veritas as of 31 December 2009, showing a profit of NOK 104.8 million for the Foundation and a profit of NOK 854.2 million for the Group. We have also audited the information in the Directors' report concerning the financial statements, the going concern assumption, and the proposal for the allocation of the profit. The financial statements comprise the financial statements for the Foundation and the Group. The financial statements of the Foundation and the Group comprise the balance sheet, the statements of income and cash flows, and the accompanying notes. The regulations of the Norwegian Accounting Act and accounting standards, principles and practices generally accepted in Norway have been applied in the preparation of the financial statements of the Foundation and the Group. These financial statements and the Directors' report are the responsibility of the Foundation's Board of Directors and President and Chief Executive Officer.

Our responsibility is to express an opinion on these financial statements and on other information according to the requirements of the Norwegian Act on Auditing and Auditors and the Norwegian Act on Foundations.

We conducted our audit in accordance with laws, regulations and auditing standards and practices generally accepted in Norway, including the auditing standards adopted by the Norwegian Institute of Public Accountants. Those auditing standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. To the extent required by law and auditing standards, an audit also comprises a review of the management of the Foundation's financial affairs and its accounting and internal control systems. We believe that our audit provides a reasonable basis for our opinion.

In our opinion,

- the financial statements of the Foundation and the Group are prepared in accordance with laws and regulations and present fairly, in all material respects the financial position of the Foundation and the Group as of 31 December 2009, and the results of the operations and cash flows for the year then ended, in accordance with accounting standards, principles and practices generally accepted in Norway.
- the Foundation's management has fulfilled its duty to properly record and document the Foundation's accounting information as required by law and generally accepted bookkeeping practice in Norway.
- the information in the Directors' report concerning the financial statements, the going concern assumption, and the proposal for the allocation for the profit is consistent with the financial statements and complies with law and regulations.
- the asset management of the Foundation has been made in accordance with law, the object of the Foundation and its statutes.

Oslo, 21 April 2010

ERNST & YOUNG AS

Finn Ole Edstrøm
State Authorised Public Accountant (Norway)
(sign.)

Auditor Report – 2008

Auditor's report

→ TO THE BOARD OF DIRECTORS OF STIFTELSEN DET NORSKE VERITAS

We have audited the annual financial statements of Stiftelsen Det Norske Veritas as of 31 December 2008, showing a loss of NOK 102,9 million for the Foundation and a profit of NOK 641,6 million for the Group. We have also audited the information in the Directors' report concerning the financial statements, the going concern assumption, and the proposal for the coverage of the loss. The financial statements comprise the financial statements for the Foundation and the Group. The financial statements of the Foundation and the Group comprise the balance sheet, the statements of income and cash flows, and the accompanying notes. The regulations of the Norwegian Accounting Act and accounting standards, principles and practices generally accepted in Norway have been applied in the preparation of the financial statements of the Foundation and the Group. These financial statements and the Directors' report are the responsibility of the Foundation's Board of Directors and President and Chief Executive Officer. Our responsibility is to express an opinion on these financial statements and on other information according to the requirements of the Norwegian Act on Auditing and Auditors.

We conducted our audit in accordance with laws, regulations and auditing standards and practices generally accepted in Norway, including the auditing standards adopted by the Norwegian Institute of Public Accountants. Those auditing standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. To the extent required by law and auditing standards, an audit also comprises a review of the management of the Foundation's financial affairs and its accounting and internal control systems. We believe that our audit provides a reasonable basis for our opinion.

In our opinion,

- the financial statements of the Foundation and the Group are prepared in accordance with laws and regulations and present fairly, in all material respects the financial position of the Foundation and the Group as of 31 December 2008, and the results of the operations and cash flows for the year then ended, in accordance with accounting standards, principles and practices generally accepted in Norway.
- the Foundation's management has fulfilled its duty to properly record and document the Foundation's accounting information as required by law and generally accepted bookkeeping practice in Norway.
- the information in the Directors' report concerning the financial statements, the going concern assumption, and the proposal for the coverage of the loss is consistent with the financial statements and complies with law and regulations.

Nothing has come to our attention that causes us to believe that the asset management of the Foundation has not been made in accordance with law, the object of the Foundation and its statutes.

Oslo, 16 April 2009

ERNST & YOUNG AS

Knut Aker (sign.)
State Authorised Public Accountant (Norway)


DNV

ANNEX

11
EXTRACTS OF THE DNV MANAGEMENT SYSTEM

Integrity and transparency

Conflict of interest

DNV staff does not act in a way that can lead to dependence on other parties so that our integrity and impartiality may be hampered.
No employee may use corporate property, information or position for personal gain.
No employee of DNV shall, at any time, participate either directly or indirectly in any kind of business or activity which competes with or is detrimental to DNV, or may affect the impartiality and integrity of DNV or the employee.

No employee of DNV shall have any financial or other interest, directly or indirectly, in any business or activity which is of such a nature that the fact of his/her having such interest could throw suspicion on the integrity and impartiality of the employee or DNV. Investments in equity funds and similar non-direct investments are not deemed to fall within the prohibition in this paragraph.

Corporate legal structures

The foundation DNV is the ultimate owner of all organisational units and subsidiary companies within DNV. Climate Change and Environmental services in DNV cover third party services for carbon finance activities as accredited certifying emission reductions within UN, and regional national and voluntary schemes. For these services a separate legal entity has been established in order to ensure integrity. In the case of DNV being the host of the CTC & Network, it will be a separate legal entity to ensure that all activities of the centre are separated from other climate change activities.

Transparency and reporting

DNV requires honest, accurate and timely recording and reporting of information in order to make responsible business decisions.

DNV encourages transparency throughout the organisation. DNV is an organisational stakeholder of the Global Reporting Initiative (GRI) and continuously works to meet the transparency standards promoted by the GRI guidelines. DNV's sustainability reporting is an integral part of the Annual Report and this also takes into account DNV's Communication of Progress to the UN Global Compact.

Corporate responsibility

Corporate Responsibility is an integral part of DNV's business culture and management system.
Corporate responsibility in DNV means striving for a balance among environmental, social and economic performance and enhancing the positive impacts that DNV's core business activities have on society. Corporate responsibility goes beyond compliance to be how we conduct our business every day.

DNV has signed the UN Global Compact and is committed to the internationally recognised declarations on human rights, labour standards, environmental protection and anti-corruption.

Ethical standards

Bribery and corruption

Involvement in any form of corruption or bribery by any DNV employee, or member of the Board or Council, is unacceptable and prohibited. DNV staff is prohibited from offering, accepting or arranging bribes or anything that could be construed as a bribe.

DNV staff must never, directly or through intermediaries, offer or promise any personal or improper financial or other advantage from a third party, whether public or private. Nor must we ever accept any such advantage in return for any preferential treatment of a third party.

DNV staff shall not make direct or indirect contributions to political parties, organisations or individuals engaged in politics as a way of obtaining concrete advantage in business or other transactions. Any political contributions will be disclosed.

DNV staff shall not use charitable contributions and sponsorships as a subterfuge for bribery. Charitable contributions and sponsorships shall be documented and open for disclosure.
Gifts, hospitality and expenses

DNV staff will not give or receive any gifts or other benefits which may be perceived as influencing our impartiality or business behavior.

DNV rules prohibit the offer or receiving of gifts, hospitality or expenses that are intended to affect the outcome of specific business transactions. The offer or receipt of gifts, hospitality or expenses shall be modest and in line with acceptable legal and cultural practices.

Gender sensitivity, human rights and labor standards

DNV embraces staff diversity and respect for fundamental human rights. The diversity of the company is an important asset. DNV promotes staff diversity at all levels in the organization, and is firmly committed to providing equal opportunity in all aspects of employment. DNV will not tolerate any illegal discrimination or harassment (e.g. based on gender, religion, race, national or ethnic origin, cultural background, social group, disability, sexual orientation, marital status, age or political opinion).

DNV recognizes the intrinsic value of the different cultures in which we operate and will show respect for these cultures in all our business practices.

DNV staff actively communicate with employees, and follow international and local labor legislations.

DNV has a broad geographic employee representation in the governing bodies including the Board of Directors and the Council.

Senior management shall work constructively with employee organizations through the Global Employee Forum (GEF), regional and local work councils, and in the daily operations. The GEF ensures that

employee representatives worldwide are informed and consulted regarding major activities and strategies affecting them.

All employees worldwide have the right to express their views and concerns in good faith, for example with respect to their working conditions, without fear of reprisal. They also have the right to join a union and participate in organized activities.

Financial management, control and auditing

It is the responsibility of all managers to ensure that the units follow the internal control and governance principles, to establish adequate control routines within his/her area of responsibility, and to ensure that these routines work satisfactorily. It is the responsibility of Shared Service Managers (hereafter named "hub managers") and Controllers (or similar functions such as, Administrative Managers, Financial Controllers, and Business Controllers, etc., hereafter named "Controllers") to assist in the establishment of relevant internal control and governance procedures in the financial areas, and oversee that these are working as planned.

Control environment and monitoring

Control environment sets the tone of an organization and influences the control consciousness of its people. It is essential that the organization has a positive view towards internal control and possess ethical values and an honest management approach. DNV has set requirements and expectations for business conduct and personal conduct of employees in DNV.

To ensure an effective control environment within the financial governance area, it is important that the duties, responsibilities and authorities are clearly defined within this area. It should be clear who is responsible for each task or area of financial control activity. There should be no grey areas in terms of who is responsible for what, and no overlaps that make it possible for one person to blame another and avoid responsibility. In cases of mismanagement or abuse, it should be possible to trace to a particular person or people.

Internal financial control systems and activities shall be monitored, reviewed and evaluated continuously. In DNV, the controllers and hub managers have responsibility to monitor the internal financial control system and activities, and make sure that sufficient controls are established to mitigate the potential risks.

Auditing

All DNV units shall have an external financial auditor. The external financial auditor of the DNV Foundation is appointed by the Council, and the preferred external financial auditor for all units is the same as the external financial auditor of the DNV Foundation. For the Norwegian subsidiaries of DNV, the annual general meetings appoint the external financial auditor. For the foreign branches and subsidiaries, the CFO approves local external financial auditors, if not the same as external financial auditor of the DNV Foundation. Deviation from these guidelines shall be approved by the CFO. Whenever required by local regulations when appointing external financial auditors, the local requirements shall also be complied with.


DNV

ANNEX 12

PROFILE FORM

Organization name

Name: Det Norske Veritas AS (DNV)

Please respond to all questions. The information provided in response to the questions below may be used as part of the evaluation of the proposal. In case the proposal is submitted by a consortium of organizations, please fill one profile form for each member of the consortium and provide other relevant information on the consortium separately.

General information

Office address	Veritasveien 1 Høvik Norway	
Postal address	P.O.Box 300 1322 Høvik Norway	
	Postal Code: 1322	Country: Norway
Telephone: +47 67 57 99 00		Fax: +47 67 57 99 11
E-mail: Anett.Hollum.Valsvik@dnv.com		Website: www.dnv.com
Parent company, if any	None	
Year established	1864	
Type of organization	Public enterprise Private company Organization sponsored (assisted by government) International organization Other (please specify): …	( ) ( ) ( ) ( ) (X) Independent foundation
Type of business/services	We have divided our activities into three operating companies: (ii) DNV Maritime and Oil & Gas provides classification, verification, risk management and technical advisory services to the global maritime and oil and gas industries	

	(iii) DNV KEMA Energy & Sustainability provides consulting, testing and certification services to the global energy sector including renewable energy, carbon reduction and energy efficiency, power generation, transmission & distribution (iv) DNV Business Assurance provides certification, assessment and training services to assure the performance of customers' products, processes and organizations across a wide variety of industries globally. One of the most important competitive advantages of DNV is our investment in research and innovation. Since 1954 DNV has had a dedicated research department that has enhanced and developed services, rules and industry standards in multiple fields. Many of the technology solutions developed by DNV have helped define internationally recognized standards. Wherever we are, and whatever we do – more than 10,000 DNV colleagues take pride in working for a knowledge based organization with a broad range, a depth of competence, and with the purpose of safeguarding life, property and the environment. Please see copy of ISO 9001 certificate attached to this annex.
No. of employees	DNV has about 8,500 employees in 300 offices in 100 countries.
Primary contact person	Anett Hollum Valsvik (bid manager)
In-house working language (s)	English
Regional offices (kindly list cities/countries)	http://www.dnv.com/findus/ Main offices in Africa & Middle East: - Durban / South Africa - Dubai / United Arab Emirates Main offices in Americas: - Houston / United States - Rio de Janeiro / Brazil Main offices in Asia, Australia & New Zeland: - Mumbai / India - Kobe / Japan - Kuala Lumpur / Malaysia - Seoul / Public of Korea - Shanghai / China

	- Singapore / Singapore - Sydney / Australia Main offices in Europe: - Beograd / Serbia - Copenhagen / Denmark - Essen / Germany - Gdynia / Poland - Helsinki / Finland - London / United Kingdom - Madrid / Spain - Milan / Italy - Oslo / Norway - Podgorica / Montenegro - Piraeus / Greece - Rotterdam (Barendrecht) / Netherlands - Stockholm / Sweden

Environmental policy

Does your organization/company have a written statement of its environmental policy? YES (X) Please see copy of ISO 14001 certificate attached to this annex NO ( )

Conflict of interest

Are there any likely circumstances that may introduce a conflict of interest between the interests of the Conference of the Parties and the proponent's interests in relation to the selection process? If so, explain how this will be mitigated.

Certification

I, the undersigned, confirm that the information provided in this annex is correct. In the event of changes, details will be provided.

Name: _____ Title: _____

Signature: _____ Date: _____


DNV

ANNEX

13

DECLARATION BY PROPONENT AND DISCLOSURE REQUIREMENT

The undersigned represents to the UNFCCC secretariat the following (check as appropriate):

	The proponent accepts the terms and conditions for submitting a proposal as indicated in Annex 4.
	The proponent is aware that the UNFCCC secretariat is requesting proposals on behalf of the Conference of the Parties and this call for proposals (CFP) does not represent a commitment to select the proponent, or to reimburse any costs incurred by the proponent in connection with the CFP process.
	The proponent is aware that neither the CFP, nor any of its annexes, including this Annex 5 constitutes any agreement between the secretariat (and Conference of Parties) and the proponent. The proponent acknowledges that the sole purpose of the CFP and its annexes is to enable proponents to submit a proposal.
	The proponent acknowledges that proposal will be evaluated according to the criteria described in Annex 3.
	The proponent confirms that the proposal submitted will remain valid and open for acceptance until the selection of the host of the Climate Technology Centre as described in Annex 4.
	The proponent represents that the proposal has been compiled adhering to the highest ethical standards, as stated in Annex 4.
	The proponent is not aware of any existing or potential conflict of interest. If during the evaluation process a conflict of interest arises, or appears likely to arise, the proponent will notify the UNFCCC secretariat immediately.
	The proponent has completed and submitted an executive summary and is aware that this summary will be published on the UNFCCC website.
	Signature of authorized official or person otherwise authorized to sign the proposal on behalf of the proponent.

SIGNATURE: DATE OF SIGNATURE:

NAME (Block Letters): POSITION HELD

CERTIFICATE

Number: 2141952

The management system of:

Det Norske Veritas AS and affiliated companies

Veritasveien 1
1363 Høvik
Norway

including the implementation meets the requirements of the standard:

ISO 9001:2008

Scope:
Worldwide professional services in the following international service lines:
- Ship classification
- Offshore classification
- Verification
- Technology qualification
- SHE risk management
- Asset risk management
- Enterprise risk management
- Climate change
- Healthcare and biorisk
- Fuel Testing, fuel advisory and bunker quality surveys.

Certificate expiry date:	28 December 2014
Certified for the first time by TNO Certification:	15 March 1999
Certified for the first time by DEKRA Certification:	16 March 2011
Certificate effective date:	28 December 2011

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

drs. A. Diedering
Certification Manager

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.

DEKRA Certification B.V.Utrechtseweg 310, 6812 AR Arnhem P.O. Box 5185, 6802 ED Arnhem, The Netherlands
T +31 26 356 2000 F +31 26 352 5800 www.dekra-certification.com Company registration 09085396

Certificate

Standard **ISO 14001:2004 and BS OHSAS 18001:2007**

Certificate Registr. No. 01 150 0110073

TÜV Rheinland Cert GmbH certifies:

Certificate Holder: **Det Norske Veritas AS**
Veritasveien 1
N - 1322 Høvik

and affiliated companies according to annex

Scope: Classification of Ships and Offshore Units, Risk Management, Verification, Advisory, Certification (excluding Management System Certification), Laboratory Testing, Fuel Testing, Software development

An audit was performed, Report No. 0110073 and 0100444.
Proof has been furnished that the requirements according to ISO 14001:2004 and BS OHSAS 18001:2007 are fulfilled.
The due date for all future audits is 09-09 (dd.mm).

Validity: The certificate is valid from 2011-09-28 until 2014-09-25 for ISO 14001 and for BS OHSAS 18001.

2011-09-28

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

DGA-ZM-58-95-60

DGA-ZM-58-95-64

www.tuv.com

TÜVRheinland®
Precisely Right.


DNV

ANNEX

14

DNV Standard Terms and Conditions

The standard terms and conditions are included below. These terms are negotiable.

1. Work Execution

1.1 DNV shall execute the Work in a professional manner and in accordance with the provisions of this Agreement.

1.2 The Customer shall ensure that DNV without undue delay receives all relevant information and documentation. The Customer shall further ensure that DNV's representative(s) is given necessary access to work sites.

Changes in the information provided by the Customer which significantly can influence the Service and the performance of DNV, shall be reported to DNV without undue delay.

1.3 Any documented error or defect in the Work will be rectified by DNV within a reasonable period of time at DNV's sole cost, provided said error or defect is not attributable to the Customer or Customer's subcontractors and DNV is duly notified of said errors or defects within six months after completion of the Work.

2. Safety, Health and Environment (SHE)

2.1 The Customer shall inform DNV of any real or potential SHE hazard which may be relevant to or involved or introduced in the Work and/or any necessary safety measures required for the Work, prior to or during the performance of the Work.

2.2 Whenever DNV undertakes work on site, the Customer shall provide all adequate safety measures to ensure a working environment that is safe and in accordance with any relevant legislation and to ensure that the risks that cannot be eliminated are controlled at a tolerated level.

2.3 The DNV employee has the right to refuse to carry out an activity, when the safety, according to his/her own judgement, is not satisfactory.

3. Remuneration

3.1 The Customer shall pay DNV for the Work, as specified in this Agreement.

3.2 Payment shall be made to DNV's bank account as stated on the invoice unless otherwise specified in this Agreement.

3.3 Prices quoted are exclusive of VAT or any local sales taxes.

3.4 Payment shall be made within 30 days after the date of the invoice. For late payment interest will be charged at a rate of 1% per month or part thereof, or the highest permitted interest according to the law designated in article 11.1 if this rate is lower.

4. Variations

4.1 The Customer shall be entitled to request additional work (hereinafter referred to as "Variations") under this Agreement.

4.2 All Variation requests shall be in writing, clearly defining the Variation required, including but not limited to remuneration and time schedule.

4.3 No Variation shall be implemented before the parties have reached an agreement regarding the extent and the remuneration hereto and the revised time schedule.

5. Termination

5.1 Each party shall have the right to terminate this Agreement at any time upon 30 days written notice to the other party.

5.2 In the event of termination according to article 5.1 above, the Customer shall reimburse DNV for all Work, including preparations, performed up to the date of termination and all costs and expenses reasonably incurred by DNV as a consequence of such termination.

5.3 Both parties shall have the right to terminate this Agreement with immediate effect if the other party is in material breach of its obligations hereunder, if the other party goes bankrupt or enters into liquidation proceedings.

5.4 DNV shall have the right to terminate the Agreement if the requested documents or information, according to article 1.2 above, has not been provided in time.

6. Confidentiality

6.1 Save for any deliverables under this Agreement both parties agree not to disclose to any third party without the prior written consent of the other party, any information obtained from the other party related to this Agreement.

6.2 However, each party shall be free to disclose such information as is:

a) known by it prior to the information being disclosed by the other party, or

b) part of the public domain at the time of disclosure, or

c) required to be disclosed by public authorities in accordance with applicable law.

6.3 Both parties may disclose information to their subcontractors without prior written consent to the extent necessary to complete the Work, provided that a written confidentiality agreement reflecting the principles above is entered into with such subcontractors.

6.4 The obligations of both parties as defined in this article shall apply notwithstanding the completion of the Work or termination of this Agreement.

6.5 DNV shall have the right to make reference to the Customer's name in proposals or other similar submissions made to other prospective customers, unless the Customer expressly prohibits such disclosure. Any other publications related to the Customer or the services performed for the Customer by DNV under this Agreement shall be subject to the Customer's prior approval.

7. Intellectual Property Rights

7.1 The Customer shall have full ownership rights to the deliverables developed by DNV as part of the Work, unless otherwise specified. DNV shall, subject to this Agreement on a royalty free basis, have free use of such deliverables.

7.2 Any writings (including but not limited to photographs, diagrams, models and computer programs) developed during the course of the Work, which are not part of the deliverables, shall be the exclusive property of DNV.

7.3 Notwithstanding the above, both parties agree that any intellectual property right (either registered or not) in existence prior to this Agreement shall remain the sole property of the originating party.

8. Liability and Indemnity

8.1 The Customer shall indemnify, defend and hold DNV harmless from all losses, costs and expenses incurred by DNV as a consequence of a failure of the Customer to fulfil its obligations according to article 1.2 above.

8.2 Both parties shall indemnify, defend and hold each other mutually harmless from and against any and all losses, claims and liabilities related to or arising from this Agreement as a result of:

a) death of or personal injury to any of its own employees, representatives or subcontractors,

b) the loss of or damage to any of its own property or employees, representatives or subcontractors,

c) all own consequential, special or incidental costs, losses or damages (whether direct or indirect) suffered,

howsoever caused. This applies regardless of any form of liability, whether strict or by negligence, in whatever form, except in the instance of gross negligence or wilful misconduct.

8.3 Each party shall be responsible for and accept full liability for its own acts or omissions leading to the loss of or damage to any third party.

8.4 Except as stated in articles 1.3 and 8.2 above, DNV's maximum cumulative liability arising out of or related to this Agreement shall be limited to an amount equal to ten times the remuneration paid to DNV by the Customer under this Agreement or USD 300.000 (or the equivalent thereto), whichever is the lesser.

8.5 If either party becomes aware of any incidents likely to give rise to a claim under the above indemnities, he shall notify the other party immediately.

9. Insurance

9.1 Both parties agree to maintain a general liability insurance to cover any amount either party may be liable to pay pursuant to the conditions of this Agreement or governing law.

10. Force Majeure

10.1 Delay in or failure of performance of either party hereto shall not constitute a default hereunder or give rise to any claim for damage if and to the extent such delay or failure is caused by any event beyond the control of the party affected which the party had no reasonable way of preventing or grounds to anticipate, including but not limited to an act of war, natural disaster, fire, explosion, or labour dispute. The affected party shall immediately notify the other party in writing of the causes and expected duration of any such occurrence.

11. Law and Jurisdiction

11.1 This Agreement shall be governed and construed in accordance with the laws of Norway.

11.2 Any dispute arising in relation to or as a consequence of this Agreement, which cannot be settled amicably through negotiations between the parties, shall be subject to the courts of Oslo.

12. Personnel

12.1 DNV will provide suitably qualified personnel to carry out the engagement.

12.2 DNV may substitute staff provided that the substituted staff has essentially the same qualifications as the staff being replaced.

12.3 The Customer agrees not to offer employment to any employee of DNV working on an assignment for him. Neither will the Customer use the services of any such employee of DNV as a consultant, either independently or via a third party, for a period of six months following the end of any involvement by the individual concerned as an employee of DNV. Breach of this condition will render the Customer liable to pay liquidated damages to DNV equal to four months full time normal utilisation fees for the consultant concerned.

Det Norske Veritas:

Det Norske Veritas (DNV) is a leading, independent provider of services for managing risk with a global presence and a network of 300 offices in 100 different countries. DNV's objective is to safeguard life, property and the environment.

DNV assists its customers in managing risk by providing three categories of service: classification, certification and consultancy. Since establishment as an independent foundation in 1864, DNV has become an internationally recognised provider of technical and managerial consultancy services and one of the world's leading classification societies. This means continuously developing new approaches to health, safety, quality and environmental management, so businesses can run smoothly in a world full of surprises.

Global impact for a safe and sustainable future:

More on www.dnv.com