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Advancing Energy Efficiency Under the Bali Action Plan

The purpose of this submission is to ensure that productive investment in energy efficiency is encouraged to the maximum extent possible under the Bali Action Plan. It highlights crucial ideas and specific proposals on elements contained in Paragraph 1 of the Bali Action Plan, in response to the call for input from accredited observer organizations included in FCCC/AWGLCA/2008/L.7.

Shared Vision

- **Cost-effective investment in energy efficiency is "productive" investment that has been proven to support economic growth**. On the energy supply side, raising efficiency can increase electricity generation while lowering CO_2 emissions from fossil-fueled power plants; and efficient end-use technologies, systems and practices require less input energy to deliver the necessary energy services.
- **Energy efficiency should be regarded as the "first fuel" of choice** in the context of moving rapidly towards sustainable development and a global low-carbon energy system. It often goes unrecognized that energy efficiency improvements have already offset significant greenhouse gas emission reductions in the past and have met more of the increased global demand for new energy-related services since 1990 than increased energy supplies.
- **There is massive under-investment in cost-effective energy efficiency relative to new energy supply** – and the post-2012 framework should prioritize action to reap the far greater benefits from energy productivity increases that are economically feasible.
- Meeting demand for energy services by **increasing energy efficiency on both the supply and demand side[1] has a range of well-documented advantages over conventional power plant solutions**, such as carbon capture and storage. These include low marginal abatement cost, improved energy access under supply constraints, reliability and speed of implementation, energy security, and a host of demonstrated economic, environmental and social co-benefits.

Mitigation

- **A culture of awareness and commitment to energy efficiency, with the aim of continuous efficiency improvement, must be instilled at the highest level** in both government policymaking and enterprise decision-

[1] In fact, one can think of realizing energy efficiency potential as constructing "efficiency power plants" that can meet demand traditionally supplied by conventional power plants.

making processes. This can be promoted by implementing energy management systems in the private and public sector (an international energy management standard ISO 50001 is currently under preparation).

- **Ambitious, yet achievable targets should be set for efficiency indicators**. Different indicators are appropriate at different levels, for example, energy intensity or energy productivity at the aggregate level of a sector or national economy and energy efficiency indicators at the technology or process level. The energy intensity target recommended for developed and rapidly industrializing countries by the Global Leadership for Climate Action (GLCA, 2008) of a 30% reduction in energy intensity by 2020 (4% annually) is a reasonable starting point for negotiation.
- **Energy efficiency will not just "happen", even with a price on carbon**, elimination of subsidies and internalization of externalities in energy prices. This is in spite of the fact that energy efficiency investments are typically low-risk and high-return and have relatively low marginal abatement costs. In addition to proper price signals, **policies, regulations and programs to eliminate the barriers that are preventing cost-effective investment in energy efficiency must be implemented and should be strongly encouraged, if not required in some form, under the post-2012 framework**.
- Consistent with the IEA recommendation that countries set goals and formulate best practice action plans for improving energy efficiency in each sector of their domestic economies (IEA, 2008), **Parties should be required to develop National Energy Efficiency Action Plans (NEEAPs), formulate enabling legislative and regulatory frameworks and enhance their reporting on energy efficiency actions** in the context of National Communications, economic development and poverty reduction strategies, with appropriate financial support to developing countries.
- **A process should be initiated at COP14 to prepare guidance on the structure, content and methods used to prepare, report on and evaluate progress under NEEAPs**. This process should draw on existing institutions, requirements, standards, and experiences. Such a process could be one means to address the comparability of mitigation actions that are measurable, reportable and verifiable.
- **There is broad agreement on key actions to improve energy efficiency in different economic sectors and thereby mitigate climate change**, and Parties should commit to implement such policy best practices, including the **specific IEA policy recommendations related to energy efficiency** (IEA, 2008), as a matter of urgency.

Capacity Building

- **Taking full advantage of our vast energy efficiency resources will require that billions of end-users change their habitual and investment behaviors**. Speeding the cycle of making "best available" technology "business-as-usual" (BAT → BAU) and providing sustained incentives for technology innovation represent an unprecedented market transformation challenge that will require a broad spectrum of regulatory, policy and program interventions.

- **Capacity building "software" should be added as a fifth pillar of the Bali Action Plan** (to complement technology "hardware" and to ensure that the necessary financial resources are allocated for this purpose). Around the world, there is insufficient attention to develop and mobilize the human capital, labor, information, and materials & services needed to exploit the energy efficiency resource. We need the capacity to develop efficiency markets that exploit individual high-efficiency end-use technologies, enabling or platform technologies (e.g., smart grids) and new business models.
- **An energy efficiency policy "toolkit" should be developed** to support countries in their efforts to develop and implement energy efficiency mitigation strategies and programs on terms which are most appropriate. Analysis of the "top ten" policies and measures that have proven successful in different sectors and country contexts can provide useful information on policy objectives and co-benefits, P&M design best practices, regulatory prerequisites, implementation costs and benefits, suitable impact assessment approaches, etc. Countries may have different objectives (e.g. increased energy access is a key issue for many developing countries), barriers (e.g., lack of access to capital) and opportunities and, therefore, different challenges and policy solutions.
- **The Parties should devise a strategy and institutionalize a system for regular collection of energy efficiency data**. A better tracking, thorough documentation and effective communication of the energy efficiency resource can increase its likelihood of deployment and success. The database can inform analysis of energy efficiency mitigation contributions and potential, policy impact analysis and design.

Technology

- The **real threat of technology lock-in to a high-carbon development path** must be acknowledged and technology transfer and deployment issues addressed effectively as a matter of urgency.
- **Different strategies are needed for accelerating the deployment of proven vs. new energy efficiency technologies**. With respect to the latter, intellectual property rights issues might best be tackled at the R&D stage (e.g., cooperative R&D agreements that commit partners to shared IPR up-front), and existing and new mechanisms to facilitate their widespread adoption, particularly in rapidly growing economies, are needed.
- With respect to existing high-efficiency technologies and processes, **an institutional mechanism should be created to systematically identify those technologies that have significant energy-savings potential – and to explore options to facilitate widespread deployment of these technologies in developing and transition economies**. Although high efficiency technologies that can reduce greenhouse gas emissions significantly are increasingly manufactured in the developing world (e.g., industrial electric motors, appliances) – even in developed countries, these technologies are not always readily available. Furthermore, some energy efficient processes and products are proprietary, in some cases limiting their adoption in developing and transition economies. Specific strategies to speed their deployment, such as global efforts to phase out inefficient lighting technologies, should be negotiated and implemented.

- **Develop verifiable, measurable indicators to evaluate the adoption of energy-efficient technologies**. Given difficulties of measuring energy-efficiency adoption with output measures such as energy use/ton of product produced, information on specific technology adoptions is likely to be a better indicator, if analysis is sufficiently disaggregated by industry type and size. This approach can be supported with survey methods and/or technology sales data.

Finance

- **There is massive under-investment and in constructing "efficiency power plants"** given the scale of potential cost-effective greenhouse gas emission reductions relative to new energy supply options. It takes money to make money and we are not making the level of investment in energy efficiency – hardware, policies and programs – that would generate a significant return. It has been estimated that some $170 billion could be invested productively in energy efficiency every year to 2020, with an average return of 17% and ramping up to $900 billion in energy cost savings annually by 2020 (Farrell & Remes, 2008).
- **Marginal abatement cost curves are helpful at demonstrating the economic advantages of end-use efficiency technologies over other options, but should be supplemented by estimates of the cost of delivery of energy efficiency**, which is often overlooked in analyses. Addressing market imperfections and barriers to the widespread uptake of high-efficiency equipment, systems and practices that promote energy conservation will require political will, cost money and take time. A total cost approach must therefore be used to inform policy decisions and resource allocation under the Bali Road Map finance negotiations.
- **The UNFCCC secretariat should produce a supplement to its 2007 report "Investment and Financial Flows to Address Climate Change" on investment in supply- and demand-side energy efficiency.** Despite important contributions to global energy productivity in the past, the contributions of energy efficiency have, in large part, remained invisible and often go unrecognized. Moreover, efficiency resources, although proven, remain seriously underdeveloped and there is little consolidated information on the costs and benefits of scaling up investment in energy efficiency to maximize productivity gains in a cost-effective manner. Estimates and scenarios of the contribution of energy efficiency to climate mitigation should reflect the need for barrier removal efforts, as sufficient financial and human resources will need to be mobilized.
- **A common standard for evaluating the return and risk of energy efficiency investments should be developed** to encouraging greater adoption of energy-efficient technologies and practices. Hurdle rates or payback periods are a common, yet poor indicator to use as a basis for making energy efficiency investment decisions and exclude many low-risk investments that save enough in energy costs to significantly increase the enterprise's annual cash flow, even after paying amortized cost of the investment (Jackson, 2008).
- **The Parties must agree to significantly reform the CDM to scale up carbon financial flows to end-use efficiency.** To this end, COP14 should request the CDM Executive Board to report on their efforts to facilitate the

uptake of energy efficiency projects under the CDM and to issue a Call for Public Input on CDM reforms to facilitate end-use energy efficiency, as well as to request the UNFCCC secretariat to conduct a practitioner workshop prior to June 2009 to recommend reforms for consideration by Parties. Overcoming the barriers to end-use efficiency under the CDM was not included in the list of 26 possible CDM reforms in FCCC/KP/AWG/2008/L.12, despite widespread recognition of the problem (Arquit Niederberger, forthcoming). Some key reforms specific to end-use efficiency have been proposed informally and through CDM EB Calls for Public input on an enhanced barrier test[2] and on PoA[3], and there is a separate call for input on emissions trading and the project-based mechanisms under the AWG-KP process.

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[2] http://cdm.unfccc.int/public_inputs/2008/cers_rev/index.html

[3] http://cdm.unfccc.int/public_inputs/2008/PoA/index.html