

Technology Executive Committee (TEC)

Distributed renewable energy generation – *Overview and policy key findings for further deployment*

ADP Technical Expert Meeting: Renewable energy supply

Bonn, Germany, 3 June 2015

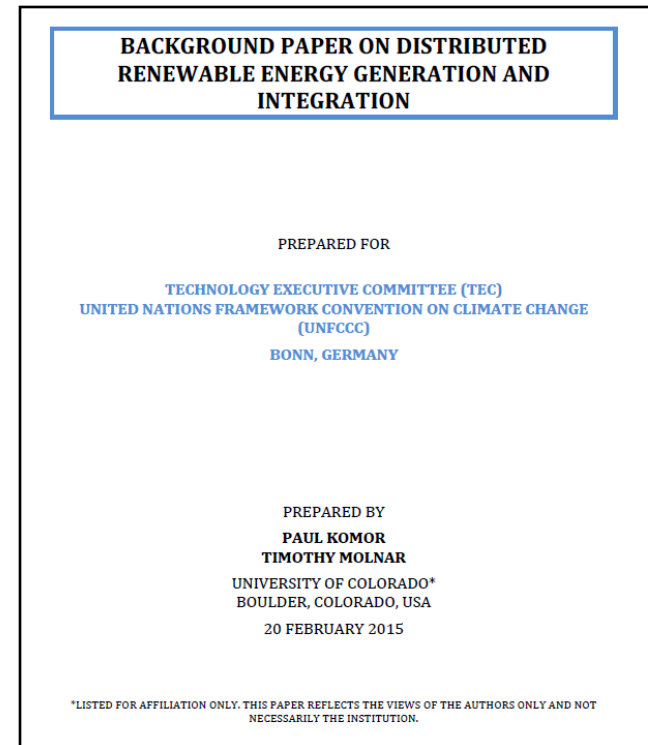


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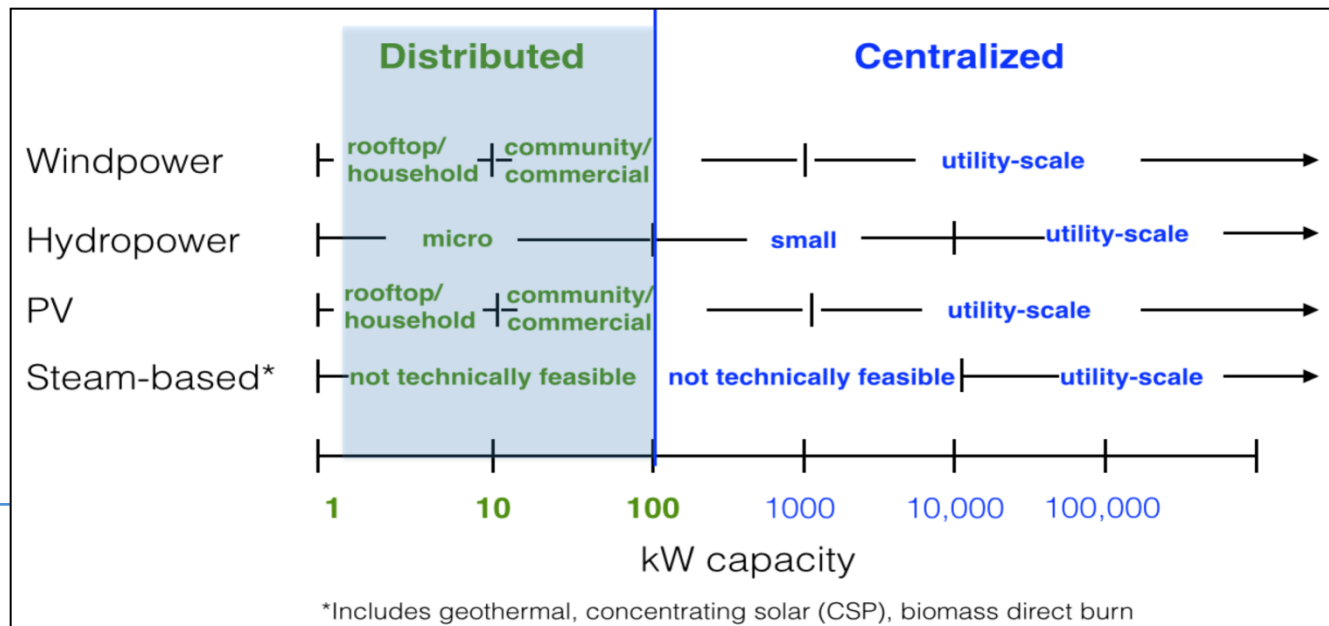
TEC work on distributed renewable energy (RE)

- TEC task force on mitigation, currently working on **distributed RE** – includes stakeholder representatives (BINGO, ENGO, RINGO, IRENA and IPEEC)
- Background paper published in February 2015
- Thematic dialogue held on 10 March 2015
- Ongoing preparation of a TEC Brief and key messages to COP 21



Overview – What is “distributed generation”?

- Electricity produced at large power plants (>1 MW) and delivered to users via transmission and distribution system: Centralized systems
- **Use of smaller power sources (1 kW to 100 kW) located at, or near users: Decentralized or Distributed systems**
 - Can be off-grid, nano-, micro- or mini-grids
 - Can be connected to centralized grids

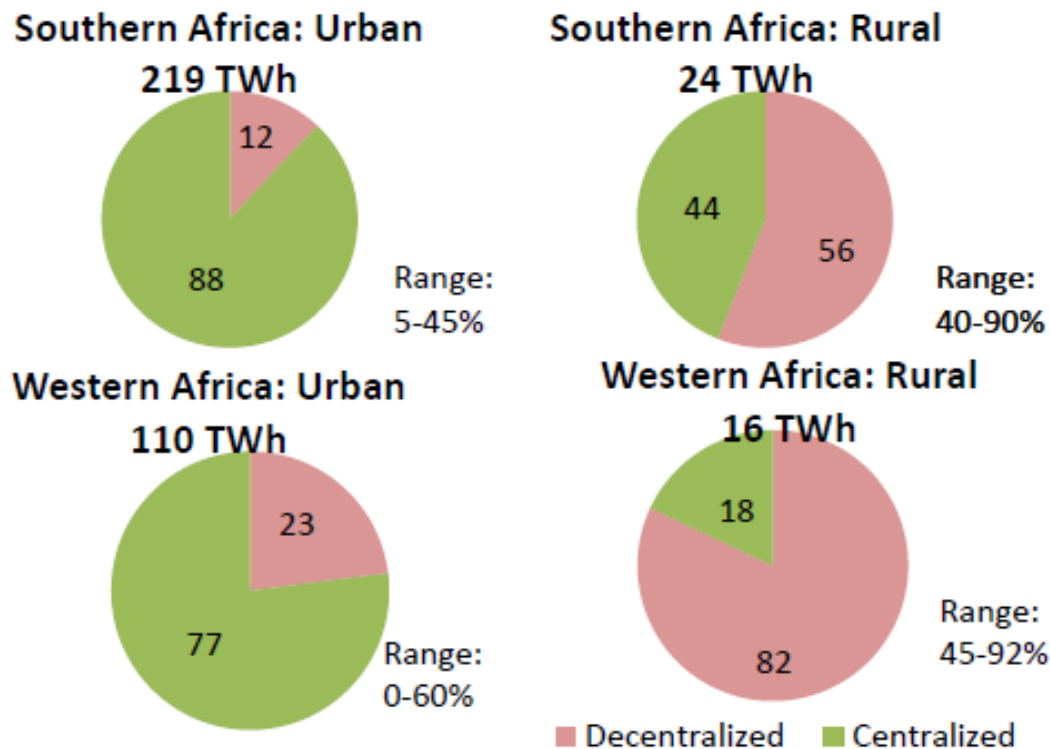


Overview – Comparative advantages and co-benefits

- Applicable to small/remote communities
 - ✓ Will significantly increase energy access in the medium and long-term in developing countries, bringing sustainable development, pollution reduction (black-carbon) and other co-benefits
- Greater system resilience due to diversity of supply
- Reduced transmission and distribution losses
- Allows for private involvement/investment in generation
- Greater involvement and ownership of local communities

Overview – Growth potential

Projection for RE grids vs mini-grids/off-grid in Africa in 2030



Source: IRENA power pool studies



Barriers to deployment of distributed RE

- Policy framework: lack of, uncertainty, lack of transparency, weak implementation/monitoring/evaluation/refinement
- Technical: reliability, intermittence, storage, integration/connection into grids
- Lack of in-country capacity at various levels
- Multi-actor environment with different needs/perspective
- Financial/investment: first costs, access to financing, subsidised fossil fuel, operation costs, lack/no incentives, investment business risks

Some policy key findings for deployment of distributed RE

Cross-cutting

- Development, implementation, monitoring and fine-tuning of stable, transparent, effective and progressive policy framework
 - Reassessment of the power utility/public and private roles in electricity supply
 - Deployment of distributed RE through NAMAs
- } **TEM 2014 policy option**

Technical

- Importance of integrated planning for projected level of service, and better understanding customers/communities' needs and grid's capacity to integrate distributed RE
 - Provision of incentives/conditions/support for operation and maintenance (O&M) systems
 - Promotion/facilitation of smart grid technologies
- } **TEM 2014 policy option**

Capacity-building

- Strong need to build and strengthen in-country capabilities at various levels:
 - Public (governments, power utilities, planning agencies, financiers)
 - Private sector (consultants, project developers, financiers)
 - Local communities, including support for local entrepreneurs
 - Research and academia

Some policy key findings for deployment of distributed RE

Financing

- Provide financial incentives and certainty around revenues } *TEM 2014 policy option*
- Promote and facilitate the implementation of effective innovative business models
- Promote/facilitate the use of standardized contract and streamlined contractual processes
- Rethink fossil fuel subsidies and provide support to distributed RE
- Reassess import duties and taxes } *TEM 2014 policy option*
- Allow/request power utilities to finance/support/facilitate distributed RE, including support systems, such as smart grid components and technologies

Additional opportunities/actions to further deploy distributed RE

- Further investigate specific issues, such as effective/innovative business models, energy storage, urban vs rural issues, etc.
 - TEC will prepare a paper in 2015-2016 to deepen some issues, such as business models, markets and capacity-building
- Share best practices, provide recommendations/guidance to countries and effectively reach out to national policy-makers and related stakeholders
- Establish substantive linkages between the Technology Mechanism and Financial Mechanism, as well as with financial institutions and project developers

Thank you!

More information on TT:CLEAR:
http://unfccc.int/ttclear/pages/tec_home.html

