

Energy Communities of Practice: Areas for collaboration

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Introduction


Formulating and implementing low emission development strategies for the energy sector is a complex process that requires integrated analysis of various technical, socioeconomic, financial, market, and political factors. In many countries, inadequate human and financial capacity constrains the development and implementation of long term strategies. International communities of practice can address these shortcomings by facilitating deeper technical collaboration and peer to peer learning on the design and implementation of specific energy sector low emission development strategies (LEDS).

A community of practice is a collection of individuals from a shared sector or working area who form a group to regularly engage in peer to peer learning to improve their personal and collective group knowledge.¹ While no two communities are alike, they require a structure that permits fluid membership and that is not attached to a single individual, promoting forms of exchange both inside and outside of the formal channels of communication. Communities of practice are demand driven and evolve dynamically to meet their members' needs.²

About us

The Low Emission Development Strategies Global Partnership (LEDS GP) was founded to advance climate resilient low emission development through coordination, information exchange, and cooperation among programs and countries working to advance low emission growth. Launched in 2011, the partnership now brings together more than 160 governments and international institutions.

The Energy Working Group is one of LEDES GP's longest standing workstreams. By providing opportunities for learning, information exchange, and greater cooperation, the Energy Working Group assists countries around the world in designing and implementing successful climate compatible development strategies. Over 260 working group member practitioners from national governments, multilateral institutions, nongovernmental organizations, and private companies have already benefited from initiatives organized by the Energy Working Group.



The LEDES Energy Communities of Practice is a signature activity of LEDES GP's Energy Working Group. The project supports the mission of the LEDES GP to assist countries around the world to design and implement successful climate compatible development strategies by creating a member driven practitioner network.

Importantly, communities of practice offer an alternative to conventional knowledge sharing networks, which tend to feature top-down development assistance and policy adoption, by providing an inclusive, member driven experience. With free membership open to all experts working in the field, the Energy Communities of Practice will work to further dialogue and promote collaboration on the deployment of clean energy policies by establishing a network of engaged experts focused on a particular important region or high impact policy area.

This scoping paper offers an overview of key thematic areas of energy LEDES design and implementation (Table 1), as well as a comprehensive list of concrete policy instruments and mechanisms around which the Communities of Practice will be formulated (Table 2).

Promoting energy LEDES development

Particularly in countries with insufficient supply of domestic expertise, communities of practice can serve as a platform for sharing knowledge, data, and analytic tools, as well as international experiences and lessons learned—all of which are important ingredients for smart policy design and implementation. Table 1 provides an overview of the diverse areas in which communities of practice can assist local energy LEDES planners.

Table 1 Key areas of expertise for LEDS design and implementation

Category	Area of expertise
Technical	Identification and technical analysis of generation options and pathways
	Assessing seasonal and day-to-day renewable resource potentials and their complementarity across regions and technologies
	Evaluating geographical limitations and conditions
	Analyzing energy efficiency and savings potentials
	Analyzing the suitability of alternative technologies and their applications for: generation, transmission/distribution, storage, energy efficiency, and grid improvement (buildings, transportation, etc.)
Socioeconomic	Impacts of different development pathways: <ul style="list-style-type: none"> • electricity access and price • gender equality • externalities such as pollution, healthcare, and land loss and degradation • job creation and macroeconomic impacts • other key economic sectors such as transportation, building, agricultural, manufacturing, and industry • energy independence
Policy and institutional design (developing markets and facilitating investments—see Table 2)	Designing a competitive market structure that is open, fair, and accessible to renewable energy development and energy efficiency programs, particularly with respect to competitive and equitable forms of: <ul style="list-style-type: none"> • development attraction • licensing • subsidies • procurement • pricing mechanisms
	Developing strategies for lowering transaction costs (legal, social, and economic)
	Coordinating working institutions and processes for policy design and implementation including mainstreaming across ministries, institution, stakeholders, etc.
	Developing financial products for direct investment support
	Creating investment attraction strategies and facilitating development of the finance sector
Evaluation and communication	Developing monitoring, reporting, and evaluation instruments to measure policy results
	Organizing public information campaigns

Low emission energy policies

The design of effective policies that support low emission development in the energy sector is an area where international communities of practice such as the LEDES GP Energy Working Group could have an enormous impact. Table 2 shows the most common policies recognized to promote sustainable energy development.

Table 2 Overview of sustainable energy policies and mechanisms

LEDS policy type	Subcategory	Policy
Renewable energy		
Financial instruments	Pricing mechanisms	Feed-in tariffs ³
		Energy production payment ⁴
	Tax incentives	Rebate programs (e.g. renewable generation equipment purchase rebates) ⁵
		Grant programs ⁶
		Renewable energy loan programs ⁷
		Public benefit funds ⁸
		Investment or production tax credits ⁹
		Accelerated depreciation benefits ¹⁰
		Property tax incentives ¹¹
		Personal income tax credits ¹²
		Reductions in sales, VAT, and other taxes ¹³
		Pollution tax exemptions ¹⁴
	Import duty reductions/exemptions on renewable energy products and equipment ¹⁵	
	Public financing products	Loan guarantees ¹⁶
		Results based financing ¹⁷
Direct capital subsidies and grants ¹⁸		
Carbon financing (Certified Emission Reductions) ¹⁹		
Small scale project financing (microfinancing, portfolio guarantees, and loss reserves) ²⁰		
Contract standardization and bundling (aggregation) ²¹		
Direct public procurement	Public renewable energy procurement programs (e.g. Green Power Procurement through the US Environmental Protection Agency) ²²	
Market based instruments	Financing strategies	Public competitive bidding (tendering) ²³
	Trade policies	Tradable renewable energy certificates ²⁴
		Capacity credits ²⁵
Power grid access policy	Guaranteed grid access and priority for renewable capacity ²⁶	

LEDS policy type	Subcategory	Policy
Regulatory policies	Renewable energy targets	Carbon dioxide reduction targets ²⁷
		Target for share of total electricity generation from renewables by target date ²⁸
		Target for renewable energy capacity in region, state, province, district, or city ²⁹
		Target for renewable energy for buildings, facilities, public institutions, and homes ³⁰
		Other types of renewable energy target ³¹
	Quota obligations	Renewable portfolio standard ³²
		Mandatory utility green power option ³³
	Distributed generation	Net metering ³⁴
Electricity wheeling ³⁵		
Energy efficiency		
Demand-side management	Pricing mechanisms	Critical peak pricing ³⁶
		Time of use rates ³⁷
		Real time pricing ³⁸
		Inverted block pricing ³⁹
	Financial incentives	Energy audits and tax rebates for industry ⁴⁰
		Customer rebates on energy bills for behavior change ⁴¹
		Tax reductions and import duty exemptions on high efficiency equipment ⁴²
		Low interest or zero interest loans for energy efficiency retrofits of existing infrastructure ⁴³
	Load scheduling	Demand-response programs ⁴⁴
	Energy conservation	Establish energy disclosure standards ⁴⁵
		Energy efficiency obligation scheme (e.g. energy efficiency resource standards) ⁴⁶
		Real time consumption and billing information ⁴⁷
		Public education ⁴⁸
	Branding	Energy labeling of buildings ⁴⁹
		Residential appliance and commercial equipment energy standards and labels ⁵⁰
Building codes and improved energy efficiency in existing buildings ⁵¹		
Distributed generation	Types of system	On site renewable energy systems ⁵²
		Combined heat and power systems ⁵³
	Market based approaches	Fair and consistent interconnection standards and regulations ⁵⁴
		Fair standby rates ⁵⁵

LEDS policy type	Subcategory	Policy
Market based instruments	Financing strategies	Property assessed clean energy (PACE) bonds ⁵⁶
		On-bill repayment ⁵⁷
		Credit enhancement (e.g. loan loss reserves, loan guarantees) ⁵⁸
	Trade policies	Tradable energy efficiency credits (white certificates) ⁵⁹
Transmission and distribution		
Establishing standards	Reliability, compliance, and monitoring	Green energy purchasing and labeling ⁶⁰
		Power generation disclosure ⁶¹
		Equipment certification requirements ⁶²
		Strengthened grid equipment and operating regulations ⁶³
		Automated network operations ⁶⁴
		Automated metering (smart meters) ⁶⁵
Audits to investigate electricity theft ⁶⁶		
Regulatory policies	Public investments and market facilitation activities	Privatization or commercialization of utilities ⁶⁷
		Competitive wholesale and/or retail power markets ⁶⁸
	Capacity building	Knowledge management expertise ⁶⁹
		Multistakeholder coordination ⁷⁰
	Distributed generation	Net metering/billing ⁷¹
Electricity wheeling ⁷²		

Notes

¹ Wenger, E. and Snyder, W. (2000) 'Communities of practice: the organizational frontier.' *Harvard Business Review* Jan/Feb: 139–145.

² Reed, J.H. (2014) *Communities of Practice: A Tool for Creating Institutional Change in Support of the Mission of the Federal Energy Management Program*. Washington, DC: U.S. Department of Energy Federal Energy Management Program.

³ REN21 (2013) [Renewables 2013 Global Status Report](#). Paris: Renewable Energy Policy Network for the 21st Century, p. 68.

⁴ Ibid., p. 76.

⁵ DOE (2014) [DSIRE: Database of State Incentives for Renewables & Efficiency](#) (electronic database). Raleigh, NC: U.S. Department of Energy.

⁶ Beck, F. and Martinot, E. (2004) 'Renewable energy policies and barriers.' *Encyclopedia of Energy* 5: 374.

⁷ Ibid.

⁸ Ibid.

⁹ REN21 (2013), op. cit., p. 69.

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- ¹⁰ Beck and Martinot (2004), op. cit., p. 373.
- ¹¹ Ibid., p. 374.
- ¹² Ibid.
- ¹³ REN21 (2013), op. cit., p. 69.
- ¹⁴ Beck and Martinot (2004), op. cit., p. 374.
- ¹⁵ REN21 (2013), op. cit., p. 69.
- ¹⁶ World Bank and Climate Investment Funds (2012) [Financing Renewable Energy: Options for Developing Financing Instruments Using Public Funds](#). Washington, DC: World Bank and Climate Investment Funds, p. 16.
- ¹⁷ Ibid., p. 12
- ¹⁸ Ibid., p. 20.
- ¹⁹ Ibid.
- ²⁰ Ibid., p. 25.
- ²¹ Ibid., p. 27.
- ²² EPA (2014) [Green Power Procurement: A Guide to Developing and Implementing Greenhouse Gas Reductions](#). Washington, DC: U.S. Environmental Protection Agency, p. 5.
- ²³ REN21 (2013), op. cit., p. 69.
- ²⁴ Ibid.
- ²⁵ Beck and Martinot (2004), op. cit., p. 368.
- ²⁶ Ibid.
- ²⁷ REN21 (2011) [Renewables 2011 Global Status Report](#). Paris: Renewable Energy Policy Network for the 21st Century, p. 13.
- ²⁸ Ibid.
- ²⁹ Ibid.
- ³⁰ Ibid.
- ³¹ Ibid.
- ³² REN21 (2013), op. cit., p. 68.
- ³³ DOE (2014), op. cit.
- ³⁴ REN21 (2013), op. cit., p. 69.
- ³⁵ Makhijani, S., Ochs, A., Weber, M., Konold, M., Lucky, M. and Ahmed, A. (2013) [Jamaica Sustainable Energy Roadmap: Pathways to an Affordable, Reliable, Low-Emission Electricity System](#). Washington, DC: Worldwatch Institute, p. 140.
- ³⁶ Davito, B., Tai, H. and Uhlener, R. (2010) 'The smart grid and the promise of demand-side management,' in Asthana, A. et al. (eds) *McKinsey on Smart Grid*. McKinsey & Company, p. 41.
- ³⁷ Ibid.
- ³⁸ Ibid.
- ³⁹ Ibid.
- ⁴⁰ Makhijani et al. (2013), op. cit., p. 135.
- ⁴¹ Davito et al. (2010), op. cit., p. 41.
- ⁴² Beck and Martinot (2004), op. cit., p. 374.
- ⁴³ REN21 (2014) [Renewables 2014 Global Status Report](#). Paris: Renewable Energy Policy Network for the 21st Century, p. 85.
- ⁴⁴ Davito et al. (2010), op. cit., p. 41.
- ⁴⁵ DOE (2014), op. cit.

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- ⁴⁶ Ibid.
- ⁴⁷ Davito et al. (2010), op. cit., p. 41.
- ⁴⁸ Ibid.
- ⁴⁹ Pasquier, S.B. (2012) [Energy Efficiency Policy Developments September 2011–September 2012](#). Paris: Organisation for Economic Co-operation and Development/International Energy Agency, p. 11.
- ⁵⁰ Smithwood, B. and Hodum, R. (2013) [Power Factor: Institutional Investors' Policy Priorities Can Bring Energy Efficiency to Scale](#). Boston, MA: Ceres, p. 20.
- ⁵¹ Ibid., p. 20.
- ⁵² ACEEE (n.d.) ['Distributed generation.'](#) Washington, DC: American Council for an Energy-Efficient Economy.
- ⁵³ Smithwood and Hodum (2013), op. cit., p. 10.
- ⁵⁴ Beck and Martinot (2004), op. cit., p. 368.
- ⁵⁵ ACEEE (n.d.) ['Standby rates.'](#) Washington, DC: American Council for an Energy-Efficient Economy.
- ⁵⁶ Smithwood and Hodum (2013), op. cit., p. 22.
- ⁵⁷ Ibid.
- ⁵⁸ Ibid.
- ⁵⁹ Pasquier (2012), op. cit., p. 19.
- ⁶⁰ REN21 (2013), op. cit., p. 73.
- ⁶¹ Smithwood and Hodum (2013), op. cit., p. 21.
- ⁶² DOE (2014), op. cit.
- ⁶³ Makhijani et al. (2013), op. cit., p. 138.
- ⁶⁴ Office of Electricity Delivery & Energy Reliability (n.d.) ['Transmission reliability.'](#) Washington, DC: U.S. Department of Energy.
- ⁶⁵ Makhijani et al. (2013), op. cit., p. 138.
- ⁶⁶ Ibid.
- ⁶⁷ Beck and Martinot (2004), op. cit., p. 368.
- ⁶⁸ Ibid.
- ⁶⁹ IRENA (2014) [REthinking Energy 2014: Towards a New Power System](#). Abu Dhabi: International Renewable Energy Agency, p. 48.
- ⁷⁰ Ibid.
- ⁷¹ REN21 (2013), op. cit., p. 69.
- ⁷² Makhijani et al. (2013), op. cit., p. 140.

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