The Clean Energy Solutions Center

Presentation at
World Renewable Energy Forum

Sandra Reategui, NREL

May 17, 2012

NREL/PR-6A20-54946

CLEAN ENERGY
SOLUTIONS CENTER

Clean Energy Solutions Center
http://www.CleanEnergySolutions.org

CLEAN ENERGY SOLUTIONS CENTER

Search

Home | About | Featured Resources | Search All Resources | Ask an Expert | Get Training | Contact Us

Accelerating the Transition to Clean Energy Technologies

The Solutions Center is brought to you by the Clean Energy Ministerial and UN-Energy. Learn more »

1 2 3 4 5

The Clean Energy Solutions Center helps governments turn clean energy visions into reality. We share policy best practices, data, and analysis tools across countries, and serve as a first-stop clearinghouse of clean energy resources. We also offer policy assistance—online training and "live" expert assistance—to help countries tailor solutions to their needs and foster international collaboration on policy innovations.

The Clean Energy Solutions Center was designed and is supported by a unique partnership between the Clean Energy Ministerial and the United Nations inter-agency energy mechanism (UN-Energy).

Learn More about the Clean Energy Solutions Center »

International climate change and energy experts convene at the World Bank to discuss low-emission future..

Subscribe to Our Newsletter »
Stay abreast of website developments and international clean energy activities with the Solution Center's monthly e-mail newsletter .

Ask an Expert »
Confer with clean energy specialists who are here to help.

Get Training »
Learn more about clean energy policy and deployment.

Objectives & Audiences

Goals

- Serve as a first-stop clearinghouse of clean energy policy resources.
- Share policy best practices, data, and analysis tools across countries.
- Deliver dynamic services that will enable expert assistance, learning, and peer to peer sharing of experiences
- Foster dialogue on emerging policy issues and innovation across the globe.

Target Audiences

- Primary: Energy policy makers and analysts from governments and technical institutes
- Secondary: Private sector companies, civil society, and others engaged in clean energy issues

Clean Energy Ministerial & UN Partnership Supporting the Solutions Center

- Clean Energy Ministerial launched the Clean Energy Solutions Center in April, 2011 for major economy countries
  - Led by Australia and U.S. with other CEM partners

- Partnership with UN-Energy is extending scope to support all developing countries
  - Enhance resources on policies relating to energy access, small to medium enterprises (SMEs), and financing programs
  - Offer expert policy assistance to all countries
  - Expand peer to peer learning, training, and deployment and policy data for developing countries

CLEAN ENERGY MINISTERIAL

UN-Energy

2012 INTERNATIONAL YEAR OF SUSTAINABLE ENERGY FOR ALL

Collaborating with Other CEM Initiatives

- Super-Efficient Equipment and Appliance Deployment (SEAD)
  - Expert policy assistance to countries
  - Highlighting resources and key messages and organizing joint webinars
- Multilateral Solar and Wind Working Group
  - Partnering on high renewable energy penetration case studies
  - Collaboration on atlas development and use and training design and delivery
- International Smart Grid Action Network (ISGAN)
  - Expert policy assistance to countries
  - Highlighting resources and key messages and organizing joint webinars
- Clean Energy Education & Empowerment Women's Initiative (C3E)
  - Will house C3E resources, training materials for women, and blogs and conduct joint outreach and possibly expert policy assistance
- Interested in Expanding Collaboration with these and other CEM Initiatives

Examples of Best Practices Reports for Renewable Energy Financial Incentives

Renewable Energy Financing Case Studies: Lessons to be Learned from Successful Initiatives

Canada Commission for Environmental Cooperation

Link: Renewable Energy Financing Case Studies: Lessons to be Learned from Successful Initiatives

Date: March 2006

Authors: Martin Tampier
Jean-Philippe Beaulieu

The first part of this report briefly describes successful programs for each technology, providing Internet links for more information, as well as contact information. The second part describes selected case studies, providing in-depth information on key features of these initiatives and the main reasons for their success.

Source: Canada Commission for Environmental Cooperation

Resource Type: Best Practices

Publicly Backed Guarantees as Policy Instruments to Promote Clean Energy

United Nations

Link: Publicly Backed Guarantees as Policy Instruments to Promote Clean Energy

Date: January 2010

Authors: Wolfgang Mostert, Kristina Johnson and John MacLean

This report summarizes the experience of public financing agencies and relevant lessons learned regarding the use of publicly backed guarantees (PBGs) to build clean energy markets. A PBG is a contractual obligation by which a government (institution), against payment of a fee, assures a compensation payment to a lender or investor in case of default by the borrowing entity. PBGs can be used for risk capital, such as equity or mezzanine finance, bank credits, bond and security issues, or letters of credit.

Source: United Nations

Resource Type: Best Practices

Example of Best Practice Summary Information for Capital Subsidies and Rebates

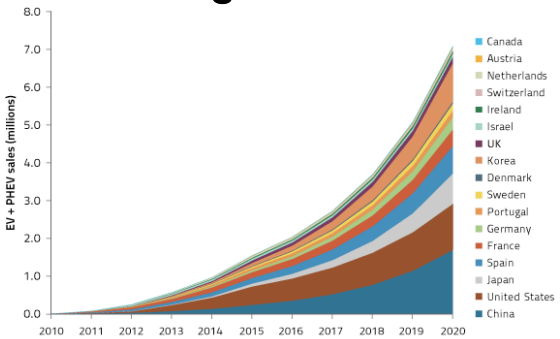
Capital Subsidies and Rebates

- For renewable energy rebates to be effective, other supporting policies, such as net metering and interconnection for example, need to be in place. (Kubert & Sinclair 2011)
- Consistency and duration improve the use of the incentive by avoiding confusion in the market and building awareness of the rebate. (Kubert & Sinclair 2011)
- Rebates ideally should reflect existing market trends, cost of alternative technologies, and program goals (e.g., intended size of market). (Ellingson et al. 2010)
- Rebates set at the appropriate level incentivize market up-take while avoiding windfall profits to system owners. (Kubert & Sinclair 2011).
- Incentive levels should be differentiated for residential, commercial, and public sectors. (Ellingson et al. 2010).
- Declining incentive blocks contain program costs by reducing incentive amounts as target capacity levels are reached, reflecting increased economies of scale as markets mature. (Kubert & Sinclair 2011)
- Rebates are most effective when used for market-ready technologies with capacity for cost reductions. (Ellingson et al. 2010)
- Complementary programs include tax incentives and feed-in tariffs. (Lantz et al. 2009)

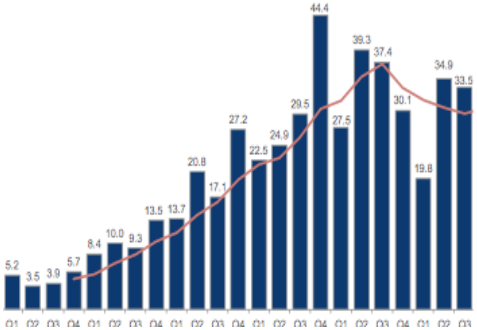
Solutions Center Policy and Deployment Data

- Potential and Scenario Studies by country
- Policy Status by country drawing from IEA and other sources
- Clean Energy Investment trends from Bloomberg New Energy Finance (BNEF), Pew, and others
- Launching new quarterly updates to BNEF clean energy investment data with webinars to present quarterly highlights
- Studies of policy and deployment impacts

National Targets for EV/PHEVs



REN21: Renewables 2011 Global Status Report



Total Clean Energy Investment, global ($bn)

CLEAN ENERGY SOLUTIONS CENTER

Solutions Center Broad Portfolio of Peer Learning Webinars and Training Resources

- Conducting monthly webinars on policy topics of interest:
  - Policy Best Practices for Industrial Efficiency
  - Smart Grid Maturity Model
  - Promoting Certification Programs in Mexico – Energy Star and LEED
  - Standards and Labels: Transforming the Market for Energy Efficiency Appliances
  - Course on Regulation and Sustainable Energy in Developing Countries
  - RE Trends - REN21 Renewables 2011 Global Status Report
- Providing training materials (videos, presentations, curriculum, etc.) in partnership with Leonardo Energy, UN, IPEEC, IRENA, other CEM initiatives, others
- Blogs page: Feed-In-Tariff cost containment, Energy Access programs, RE in Africa, etc.

Training Videos by Leonardo Energy

Renewable Energy Tools

Solar Energy Assessment for Community Energy Planning
Learn to evaluate the potential energy production of solar technologies and how to make an educated decision about installing solar power.

Introduction to Small-Scale Wind Energy Systems
Learn about small-scale wind turbines, including as vertical- and horizontal-axis turbines. The video includes a tutorial for RETscreen's wind tool, which presents how to effectively navigate the wind module of RETscreen.

CLEAN ENERGY SOLUTIONS CENTER

Solutions Center Ask-an-Expert Services Available to All Countries at No Cost

- Provide quick-response expert advice and assistance to governments and technical institutes
  - Technical resource teams for energy efficiency, renewable energy, clean transport, and energy access
  - Highlights of results and policy lessons shared
  - Technical resource teams also review site content "curated library," conduct webinars and participate in blogs
- Exploring creating policy networks on specific topics of common interest to foster peer to peer learning and dialogue with experts

www.cleanenergysolutions.org/expert

Featured Experts

Cesar Trevino
Buildings Efficiency

Ellen Morris
Microfinance

John Wright
RE Policies

Ibrahim Rehman
Rural Electrification

CLEAN ENERGY SOLUTIONS CENTER

Clean Energy Solutions Center Global Network of Energy Experts

Name	Agency	Policy Expertise
Ibrahim Rehman	The Energy & Resources Institute (India)	Energy Access
Dr. Ellen Morris	Sustainable Energy Solutions	Enterprise Development
Dr. G.C. Datta Roy Delegate (TBD)	Dalkia India Institute for Industrial Productivity	Industrial Efficiency
Cesar Trevino	Mexico Green Building Council	Buildings Efficiency
Dr. John Wright	Wright Energy Consulting (Australia)	Renewable Energy
Ted Sears	National Renewable Energy Laboratory (NREL	Low Emission Vehicles
Stephen Schuck Olivier Dubois Paul Grabowski	Bioenergy Australia Food & Agricultural Organization of the UN U.S. Department of Energy, Office of Biomass	Clean Transportation Biofuels
Holgar Dalkmann	World Resources Institute - EMBARQ	Clean & Sustainable Transportation
Gustau Gomis Manez	United Nations Environment Program (UNEP) en.lighten initiative	Efficient Lighting
Christine Egan	Collaborative Labeling & Appliance Standards Program (CLASP)	Appliance and Equipment Efficiency
Karlynn Cory	National Renewable Energy Laboratory (NREL)	Clean Energy Project Finance
Delegate (TBD)	Regulatory Assistance Project (RAP)	Utility Efficiency and Renewables
Delegate (TBD)	International Smart Grid Action Network	Smart Grid

How we are Assisting Countries

Country	Organization	Assistance
Indonesia	Ministry of Energy & Mineral Resources	1. Develop a clean energy policy network 2. Educate bankers on EE financing programs
Mexico	CONUEE	1. Cool surface policies 2. Promoting EE Certification Programs
South Africa	South African National Energy Development Institute	Regulation development: Energy Efficiency Incentives for Commercial Sector
Chile	Chilean Renewable Energy Center	Review Tax Incentive and Financial Risk Assessment studies

CESC Support to South Africa: *South African National Energy Development Institute*

- Request for assistance with development of an energy efficiency incentive program for commercial sector customers as part of Regulations on the Allowance of EE Savings under development by the Department of Energy
- Assistance to date has included:
  - Telephone consultation on program design and key considerations
  - Provided details and links to various U.S. and international EE policies
  - Provided modeling options for assessing savings form various measures
- Assistance planned:
  - Feedback on early regulation language
  - Provide best-practice information on setting incentive levels and program targets
  - Review final draft of regulation language for “unintended consequences”
- Impacts:
  - EE is crucial to meeting South Africa’s development needs and climate change requirements
    - Electricity sector is constrained until 2017
    - No appliance or building standards in place.
  - Proper program design needed to ensure reduced loads and efficient use of funds.

New Partnerships in Development with IPEEC and IRENA on Expert Assistance & Networks

- IRENA:
  - Co-branding and outreach on renewable energy policy expert assistance
  - Joint development of regional and global peer learning networks
  - Collaboration on training programs and webinars
  - Engagement of IRENA experts on renewable energy policy team
  - Collaboration on policies for high renewable energy penetration

- IPEEC:
  - Co-branding and outreach on energy efficiency policy expert assistance
  - Joint development of regional peer learning networks and collaborative activities building on recent IPEEC workshops in Latin America and Asia
  - Engagement of IPEEC experts on energy efficiency policy team

Developing Unique Resources for Policy Makers

- **High Renewable Energy Penetration Analysis**
  - Including case studies from countries and regions with high levels of renewable energy generation (Australia, Denmark, Germany, Ireland, Spain, and U.S.)
- **Tools and Reports on High RE Penetration**
- **Analysis Reports on additional Emerging policy topics**
- **Expanded Policy and Deployment Data**
- **Improved Data Analysis and Visualization Tools**
- **Multi-country DSIRE- like Database**

Developing Unique Resources for Policy Makers: High Renewable Energy Penetration

- Will address key questions that governments have about high RE penetration:
  - At what level can grid easily accommodate RE?
  - What is the cost of integrating intermittent resources?
  - What are the opportunities for increased RE use?
- Analysis will include all technologies, including solar integration
- Highlighting key lessons from high level of RE penetration in islands nations
- Analysis will include sections on:
  - Approaches to incorporate natural gas and RE
  - Cost of intermittency
  - Storage
- Policy roles at three levels of integration: grid, markets and systems
- Describe interplay with EE and demand response
- Identify effective approaches for public education
- Case studies will be available for review and feedback
- Considering developing improved tools to simulate impacts of High RE penetration and optimize system design

Solutions Center Outreach and Collaboration

- Outreach Initiatives
  - Solutions Center Newsletter
  - Global webinars and tailored country webinars
  - Social Media strategies

- Other Strategic Partnerships
  - India's BEE, Mexico's CONUEE.
  - IRENA, IEA, IPEEC, REEEP, REN21, Bloomberg New Energy Finance, Climate Works, IIP, Other CEM Initiatives, others

How You Can Get Involved

- Join as a partner and member of the expert policy team
- Check out resources on: www.CleanEnergySolutions.org
- Request expert assistance or tailored technical resources for your country
- Participate in webinars, training activities, and policy networks
- Offer advice and resources to share
- Sign up for the newsletter
- Post comments to the blog articles

Thank You – We Welcome Your Feedback

- How can we enhance awareness and use of the Solutions Center?
- What aspects of the Solutions Center content and services will be of greatest value to you and other policy makers?
- What services will allow you to engage the most in Solutions Center activities?
- What improvements can we make to add value?
- What policy-related topics are of greatest interest to you and others in your country and are there topics where expert advice or peer learning would be of interest?
- How should we structure the policy networks – e.g. what topics, global and/or regional, what types of forums, etc?
- What other suggestions do you have?