



RE-THINKING REGULATORY TOOLS TO PROMOTE RENEWABLES



ICER's rationale for its review of international case studies

The ICER Renewable Energy and Distributed Generation Report (2012) is a particularly useful reference point for policy makers, regulators and others. Where one country is facing difficulties, it is often the case that the shared experiences of other countries can help it to identify solutions to fulfill its goals for renewable energy generation. Furthermore, the report demonstrates ways in which countries can work together to improve their own RES strategies.

Many jurisdictions, all over the world, have mandated that renewable energy sources (RES), typically wind, photovoltaic, and water-based generation, shall comprise specific proportions of the overall energy supply by certain dates. For many countries, small scale generation at distribution level (Distributed Generation or DG) has become an important tool to reduce dependence on fossil fuels and to exploit local resources.

The international growth of renewables is driven by two main goals: (1) meeting climate change objectives and (2) improving security of supply. Regulation plays an important role in managing the transition to more RES and more DG.

Energy regulators from around the globe undertook an am-

bitious project to review best practices on the integration of RES and DG. The result is the 2012 ICER Report "Renewable Energy and Distributed Generation: International Case Studies on Technical and Economic Considerations".

Re-thinking regulatory tools to deal with the challenges of RES and DG

Regulation plays an important role in managing the transition to more RES and more DG

Whether in developed or developing countries, regulators are faced with similar challenges: for example, to what extent should regulators require renewable generators to bear the risk of imbalances (e.g. case studies from South Australia, the Mediterranean Solar Plan, EU Member States and the USA) and to be equipped with devices enhancing their control capabilities



ties (e.g. Mediterranean Solar Plan and China)?

The report demonstrates, through case studies from across the globe, how energy regulators are rethinking traditional regulatory models and tools (e.g. planning criteria, cost allocation procedures, etc.) to support large-scale deployment of renewable generation and DG. See in particular the case studies in the report related to Canada (more rational and efficient connection processes); Australia (connecting renewable resources located in remote areas); Namibia, Guatemala and Spain (connecting small-scale distributed generation).

Six broad themes of the ICER report

- Connecting renewable energy to the grid
- Impact of wholesale market and system operator arrangements
- The impact of renewables on conventional generation
- The legal, financial and socio-economic implications of international renewable energy projects
- The promotion of distributed generation
- The challenges faced by some developing countries despite the high potential for renewable generation from sources such as solar, wind and biomass

Some of these are also explained in more detail in these pages.

Innovative ways to better integrate Renewable Energy Sources (RES) and Distributed Generation (DG) into existing energy systems have been tried and tested in many countries. The exchange of experience and increased co-operation at regional and international level will help (both developed and developing) countries improve and realise their own RES and DG strategies.





Wholesale market arrangements and system operation rules impact renewables

Wholesale market design and system operation issues such as gate-closure times, responsibility for balancing and forecasting and cross-border capacity allocation should be taken into consideration as a whole rather than on an individual basis.

Depending on how they are adjusted, market arrangements and system operation rules can significantly affect the competitiveness, economic efficiency and operation of RES generators, and therefore might either promote or obstruct their integration. Two examples are provided in the report. Firstly, the steps to create a single European electricity market (e.g. through EU-wide network codes) and the parallel need to adjust wholesale market design rules, which traditionally have been optimised to the needs of national markets and conventional generation. The report assesses market and system design measures taken in Europe (including solutions adopted by regulators at a national level), in the USA and in Australia to better integrate increasing levels of renewable generation. Secondly, the report includes a case study on the Mediterranean Solar Plan, a supra-national project which helps to promote the development of the region's enormous renewables potential.

Connecting remote renewables

Often the best renewable resources (such as wind, geothermal and solar) are located in remote areas with currently little or no transmission capacity. A major concern in Australia was that the upfront costs (for a remote generator) of building the transmission lines required to connect the generator could be prohibitive. After consulting on several options, the Australian regulator now requires 'first movers' to bear the upfront cost of the transmission line, with subsequent reimbursement from newly connected generators. The determining factor for this option was the concern over potential asset stranding. In Ontario, Canada, the costs of upgrading the system are shifted away from renewables generators and are socialised across all energy customers. This was one of several initiatives in Ontario to re-tool regulatory instruments including simpler

settlement processes for feed-in tariffs and better connection processes for generators.

Regulatory changes that encourage small distributed generation (DG)

The report highlights some interesting regulatory reforms that tackle challenges (connection, grid operation, market issues and access to information) related to the promotion of distributed generation (through case studies on Guatemala and Spain). Under a new regulation, distributed generation can participate in open bids to supply demand or to sell their energy on the Guatemalan spot market. The experiences in Guatemala show that when the regulatory mechanisms are easy to understand, and also technically and legally consistent, the certainty and transparency encourages new DG projects.

Thematic case studies on RES and DG

Challenges specific to developing countries

Developing countries often have huge RES potential and DG can be particularly interesting in a large geographical area with a fragmented population. The case studies in the full report illustrate the particular challenges faced by developing countries. While the potential, ideas and willingness to establish RES are all present, the necessary frameworks are not always in place. For example, although Algeria and Malawi are increasing their generation of solar and wind energy they face economic, governance and skills barriers to taking this further. Other countries, like China, India and Brazil face different but equally harsh challenges on their way to integrating RES in their energy portfolios which have more to do with the size of their economies and established habits (e.g. an abundance of coal, network congestion and the lack of a competitive market are hampering RES in South Africa).

Spreading good practice worldwide

Through ICER, energy regulators are sharing their experiences and practices in this rapidly developing area:

- The case studies in the report were collected in time to present them at the energy regulatory community's flagship event: the Fifth World Forum on Energy Regulation (www.worldforumv.org), Quebec City, May 2012.
- During the European Union's 2012 Sustainable Energy Week (www.eusew.eu), a dedicated CEER-ICER workshop on Renewable Energy Strategy (20 June 2012), in Brussels, also presented an opportunity to showcase and discuss the ICER report.

International Confederation of Energy Regulators (ICER)

The International Confederation of Energy Regulators (ICER) was created at the Fourth World Forum on Energy Regulation (WFER), in 2009. It is a voluntary framework for the co-operation of energy regulators from around the globe. Its aim is to improve public and policy maker awareness and understanding of energy regulation, and to play a role in addressing a wide spectrum of socio-economic, environmental and market issues.

Through ICER, energy regulatory issues transcending regional and national boundaries can be addressed through dialogue and co-operation on a global scale. ICER's membership includes over 200 regulatory authorities over six continents.

The virtual work of ICER

ICER is a virtual organisation, the backbone of which is its website (www.icer-regulators.net) and its four virtual working groups (VWGs):

VWG1: The Role of Regulators in Guaranteeing Reliability and Security of Supply

VWG2: Climate Change

VWG3: Competitiveness and Affordability

VWG4: Education, Training and Best Practices



Publications

ICER Reports:

- Role of Energy Regulators in Guaranteeing Reliability and Security of Supply – National, Regional and Global Dimensions, March 2012
- Experiences on the Regulatory Approaches to the Implementation of Smart Meters, March 2012
- Renewable Energy and Distributed Generation: International Case Studies on Technical and Economic Considerations, January 2012
- ICER Response to the European Commission Public Consultation on the External Dimension of the EU Energy Policy, Ref. I11-SC-05-05, 21 February 2011
- ICER Energy Efficiency Report, Ref. I10-SC-02-04, June 2010
- ICER Work Plan 2010-2012
- ICER 2010 Annual Report
- World Energy Regulators' Statement on Climate Change, 20 October 2009

ICER Factsheets:

- ICER's Security of Supply Report, Ref. FS-12-01, May 2012
- ICER's Renewable Energy and Distributed Generation Report, Ref. FS-12-02, May 2012
- ICER's Smart Metering Report, Ref. FS-12-03, May 2012
- Brochure on the International Confederation of Energy Regulators (ICER), Ref. FS-12-04, May 2012
- Regulatory Practices for the Promotion of Energy Efficiency, Ref. FS-11-01, April 2011

The full report, as well as all others listed here, can be found at <http://bit.ly/ICERreports>

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