CREATING AN ENABLING LEGAL AND REGULATORY ENVIRONMENT

C5+1 REGIONAL LEGAL REGULATORY WORKSHOP

7 JUNE, 2018

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Enabling Legal and Regulatory Environment

- Expression of political commitment from government
- Effective rule of law and transparency
- Effective administrative and permitting process
- Clear and effective pricing structure
- Grid Access: connection availability and ease of grid access
- A functioning finance sector
- Industrial development and employment strategies
Expression of political commitment from government

Adopted, published renewable energy policy (general or resource specific)

National targets for renewable energy

- the 2020 Renewable Energy Targets adopted by the European Union
- Greece has committed to increase the share of renewable energy in its gross total final consumption to 20% by 2020, which is 2% higher than its EU obligation
- The Chinese government has declared a target of connecting 150 GW of wind power to the grid by 2020
- The 2010-2019 Decennial Plan for Energy Expansion in Brazil set the following installed capacity targets for renewable energies:
  - Hydro: from 83.1 GW in 2010 to 116.7 GW by 2019.
  - Small hydro: from 4 GW in 2010 to 7GW by 2019.
  - Biomass: from 5.4 GW in 2010 to 8.5 GW by 2019.
  - Wind: 1.4 in 2010 to 6 GW by 2019
Promotional Policies

Price setting
(Electricity feed-in law, net metering)

Quantity setting
(Renewable Portfolio Standards, Green Certificates)

Competitive Bidding
## Comparison of Market Policies

<table>
<thead>
<tr>
<th>Price Setting Policies</th>
<th>Advantage</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td></td>
<td>Proved to be most successful at developing renewable energy markets and</td>
<td>The tariff is difficult to set, particularly at the beginning when the true</td>
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<td></td>
<td>domestic industries</td>
<td>costs of renewable energy systems are unknown.</td>
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<td></td>
<td>Flexible and can be designed to account for differences in technologies</td>
<td>Overpayments in static feed-in tariff systems result in economic inefficiency</td>
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<td>and in the marketplace</td>
<td>and unnecessarily high prices that consumers pay for renewable power.</td>
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<td></td>
<td>Encourage steady growth of small- and medium-scale producers, involve</td>
<td>Requirements for domestic production can involve restraints on renewable</td>
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<td>low transaction costs, facilitate financing, and provide easy entry for</td>
<td>energy trade.</td>
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<td>new players into the market.</td>
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# Comparison of Market Policies

## Quantity Setting Policies

<table>
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<th>Advantage</th>
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<tr>
<td>Promote the least-cost projects</td>
<td>Market price fluctuations can create instability</td>
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<tr>
<td>Provide certainty regarding future market share for renewable energy</td>
<td>Large, centralized plants tend to be favored to the disadvantage of small investors</td>
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<td>more likely to fully integrate renewable energy into electricity supply</td>
<td>Development tends to get concentrated in areas with the best resources</td>
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<tr>
<td>infrastructure</td>
<td>------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Facilitate the establishment of a renewable energy credit trading system</td>
<td>Targets set the upper limit for development as there are no incentives to install more than the</td>
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<tr>
<td>(a green certificate system).</td>
<td>mandated level.</td>
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<td>Tend to create cycles of stop-and-go development</td>
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<td>Can be complex to design, administer and enforce.</td>
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<td></td>
<td>Have high transaction costs</td>
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<td>Lack flexibility</td>
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Requirements for successful price-setting policies

Price setting laws should:
- Ensure periodical and wise adjustments of the premium with incremental adjustments built into law
- Establish tariffs according to technology (and location) with input from research institutes and renewable energy industries
- Provide tariffs for all potential developers, including utilities
- Ensure that tariffs are high enough to cover costs and encourage development
- Guarantee tariffs for long enough time period to ensure high enough rate of return
- Ensure that costs are shared equally across country or region
- Eliminate barriers to grid connection.
Requirements for successful quantity-setting policies

Quantity setting laws should:

• Apply to a large segment of the market
• Include specific purchase obligations and end-dates
• Establish adequate penalties for non-compliance, and enforcement
• Set different bands by technology type (e.g. a carve-out for solar PV)
• Require long-term contracts to reduce uncertainty for project developers
• Establish tradable certificates with minimum and maximum prices
• Avoid a time gap between one quota and the next (for competitive bidding).
Effective rule of law and transparency
Effective administrative and permitting process

The legislation is enacted and clearly defined

Clear guidance is provided and permitting regulations are available for
- land use rights
- water use rights

Procedures for the preparation, coordination, approval, and implementation of RES projects, including but not limited to
- Development and approval of the feasibility study
- Environmental impact assessment
- Approval of the design documentation and cost estimates
- Construction and commissioning
- Grid connection
- Licensing and operation

Standardized Power Purchase Agreements (PPAs)
- Long-term - 10-30 years
Clear and effective pricing structure

Clarity on the level and stability of the remuneration scheme
Long-term PPAs

Provisions setting out how and when changes can take place, such as schedules for periodic review, mechanisms for price discovery and procedures for fast-track review in the event of unexpected changes

Where sudden changes are required, these should not be retroactive, as this can be deeply damaging to future investor confidence.
    Spain retrospectively reduced tariffs for solar power because of falling capital costs, resulting in significant market impacts and legal controversy
Grid Access

Non-discriminatory rules and guaranteed grid connection

Application of network codes which do not discriminate against variable (such as wind and solar) power producers but enable their full participation in the market

Cost transparency for all generators accessing and connecting to the power grid

Integration of renewable energy within the electricity system
  capacity of the grid operator to handle grid connection requests and allocate a grid connection point
  authorisation to effectively connect to the grid

Priority access is guaranteed to renewable energy producers
Priority dispatch rights
A functioning finance sector

Access to capital

Public finance support

Public dedicated renewable energy funds or renewable energy-eligible funds

Direct funding
subsidies, grants, direct contract or provision of equity and/or debt

Direct public investment
projects are directly developed by the government

Fiscal incentives
tax exemptions, accelerated depreciation, import and other benefits
fiscal stability incentives
technologies are shielded from potential future changes
Industrial development and employment strategies

RE is an element for promoting local industrial development and competitiveness

Governments can facilitate an employment strategy by developing specific training to attract workers to the field of RES

A variety of policies could be used to build and maintain “market infrastructure” and facilitate market development, including:

- policies for design standards,
- accelerated siting and permitting,
- equipment standards,
- contractor education and licensing,
- policies to induce renewable technology manufactures to site locally, and
- direct sales of renewable systems to customers at concessionary rates

Public awareness, information and training
Mini-Grid Renewable Energy Systems

Legal and Regulatory Barriers:
• Policies that impede establishment of cost-recovery tariffs
• Limited knowledge on regulatory framework for mini-grids
• Lack of a policies and institutional support for cooperatives and private sector rural electricity supply systems

Financial and Economic Barriers:
• High investment and transaction costs
• Inability to access capital/financing
• Uncertain resource supply projections
• Lack of subsidies/incentives that support renewable energy mini-grid systems.

Market and business risks:
• Low customer ability to pay
• Uncertain customer demand
• Lack of technical skills for design, construction and O&M, system management, monitoring and customer relations.
• Insufficient community involvement/responsibility
Legal Principles for Mini Grid Regulatory Framework

Legal Principles for Mini Grid Regulatory Framework

- Regulation of mini-grid electricity systems
- Quality of service standards
- Subsidies and tariffs
- Regulatory obligations / multi-year “regulation by contract.”
- Transparency in utility grid expansion plans
- An enabling regulatory framework that has clear separation of responsibilities and allows “light-handed” procedures and processes for small, standalone systems.
  - A clear separation of responsibilities
  - Light-handed procedures and processes allow for simplified regulatory procedures
Tariff Structure and Tariff Types for Mini Grids

Tariff structures for renewable energy mini-grids should:
• Recover at least O&M&M costs
• Reflect cost structure – a high fixed charge (higher than typical tariff structures applied in large grid systems) to reflect fixed O&M&M costs, a variable charge to reflect fuel costs, and a levelized capital cost charge partially reflect capital investment costs
• Remain below consumers’ ability to pay

Tariff Types
Many different types of tariff regimes have been tried with mixed results.
• Free of charge
• Highly subsidized tariffs
• Break-even tariffs
• Financially viable tariffs
• Differential Customer Tariffs

Tariff Collection Mechanisms
• Monthly payments
• Annual or semi-annual payments
• In-kind payments
• Prepayment cards
• Current-limiting devices
Ownership and Management Options for Mini Grids

Business Models:
- Utility model
- Community based organization model
- Private sector model
- Hybrid model
Stand Alone Renewable Energy Systems

Legal and Regulatory Barriers:
• Lack of level playing field and inclusive renewable energy policy to allow stand alone system industries to compete fairly with alternate service providers.
• Lack of industry-wide technical standards to ensure quality, safety, longevity and after sales service.

Financial Barriers:
• High initial costs of systems for end users and service providers.
• Lack of access to finance.

Market Performance:
• Lack of delivery infrastructure between rural areas and urban based suppliers of stand alone systems.
• Need to scale up capacity building to increase understanding of industry specifics for all partners involved.
Stand Alone Renewable Energy Systems (cont.)

Legal and Policy Instruments
  Inclusive rural electrification policy framework
  Fiscal policy rationalization

Financial and Institutional Instruments
Accessing finance options
  • Credit
  • Subsidies and Grants
  • Partial Risk Guarantees

Business Models
  • Dealer Model
  • Fee-for-Service Model
    o Leasing or hire purchase
    o Energy Service Companies
  • Concessions
  • Cooperatives
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