

GLOBAL WORKSHOP ON GRID CONNECTED RENEWABLE ENERGY

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What we need --

**Energy Policies to Support Development
and Deployment of Renewable Energy.**

Renewable Energy Policies Have Become A High Priority on the Agenda of World Leaders

Critical to:

- **Energy Security,**
- **National Security, and**
- **Economic Growth and Stability.**

Crucial to Reducing

Global Carbon Emissions.

Fundamental Objectives

- **Remove Barriers and Encourage Investment in Renewable Energy Electric Generation.**
- **Development of Adequate and Reliable Electric Transmission Grid for Interconnection of New Renewable Generation Capacity.**

Principle Policies That Have Been Successful in Promoting Renewable Energy.

- **Renewable Portfolio Standards**
- **Feed-in Tariffs**
- **Capital Subsidies, Grants, or Rebates**
- **Investment, Production, or Other Tax Credits**
- **Tradable Renewable Energy Credits**
- **Net metering**
- **Competitive Bidding**
- **Public Investment**

Renewable Portfolio Standards (RPS)

- **Plan, Goal, or Requirement to Achieve a Certain Level of Renewable Energy by Specific Date.**
- **Mandatory RPS in 29 States, and Additional States with Non-binding RPS.**

State RPS Programs

- **Vary widely in definitions of renewable energy.**
- **Some aggressive, some less aggressive target percentages.**
- **Have Permitted States to Customize the Program to Its Situation.**
- **State RPS Programs – along with Production Tax Credits – Have Been Primary Drivers of Growth of Wind Power in U.S.**

State of Connecticut's RPS

- **Example of an RPS will a high percentage target.**
- **Requires that 27% of energy consumed be generated using renewable energy resources by 2020.**

National RPS

- **National RPS Is Key Element of Obama Administration's Energy Program and Energy Legislation Being Debated in Congress**

American Clean Energy and Security Act of 2009

- **Passed by U.S. House of Representatives in June, 2009.**
- **Combined energy efficiency and renewable energy standard (RES).**
- **RES of 6% in 2012, increasing to 20% in 2020.**
- **Minimum of 75% of RES must be met by renewable energy.**

Feed-in Electric Tariffs

- **Driver of Rapid Growth of Renewable Energy in Europe, with Those in Germany, France, and Spain Being the Best Known.**
- **No National Use of Feed-in Tariffs in U.S.**
- **Limited Interest at State Level in U.S.**

Feed-in Tariff

- **What Is It?**
- **Requires Electricity From Renewable Resources to Be Purchases at Premium Rate.**
- **Provides Price Certainty to Renewable Generator**
- **Some Assurance of Reasonable Profit**

Feed-in Tariffs in Germany, France, and Spain

- **More Sophisticated Feed-in Tariffs, Also Known as Advanced Renewable Tariffs.**
- **Pay different prices per KWH for Different Technologies, Projects of Different Sizes, Different Applications, and Different Resource Intensities.**

Example, German Feed-in Tariffs

- **Renewable Energy Technologies Are Guaranteed Interconnection to Grid**
- **Paid Premium Rate Designed to Give Reasonable Profit for Investors over 20-year Term**
- **Rates Are Differentiated by Technology – Intent That Each Can Profitably Be Developed**

German Feed-in Tariff

- **Have Caused High Rate of Growth in Renewable Energy Market.**
- **Made Germany a Leader in Photovoltaic Systems and Wind Power.**

Connection of Renewable Energy Resources to the Grid

- **Location-Constrained Character of Renewable Resources.**
- **Causes Transmission Policies – Access and Cost Allocation – to Be More Significant to the Feasibility and Financial Viability of Projects.**

Transmission Grid Access

- **Access to Transmission Grid Many Times Has Been Difficult for Renewable Resources in the U.S.**
- **Federal Energy Regulatory Commission (FERC) Has Taken a Range of Actions to Reduce Barriers to Renewable Energy.**

FERC Order No. 890

- **Modified Transmission Policy to Accommodate Intermittent Resources.**
- **Reformed Transmission Rates to Exempt Wind Generators (and other intermittent resources) from the Highest Tier of “Energy and Generator Imbalance Penalties.”**

FERC Policy on Allocating Transmission Interconnection Costs

- **General Principle for Cost Allocation: Costs Should Be Paid by Those Who Cause and Benefit.**
- **Analysis of Who Benefits and How Much Can Be Very Difficult in Case of Renewable Energy Generation.**

FERC Policy on Allocating Transmission Interconnection Costs

- **Prior Policy of Allocating Entire Cost of Interconnect to the New Generator Was Obstacle to Renewable Resources.**
- **New Policy Applicable to Multi-User Interconnection facilities.**
- **New Policy Recognized Unique Challenges Faced by Renewable Energy Resources.**

Allocation of Cost of Multi-User Interconnection Facilities

- **Initially “Roll-In” Costs of the Facilities, and Allocate to the First Project Only Its Share of the Costs. (FERC Order in California ISO Case.)**
- **Rolled-In Costs to Be Recovered Through a Charge Applicable to All Transmission Users in a Large Region (CA ISO).**
- **That Charge Would Be Reduced As Each New Project Commences Operation.**

Financing Mechanism

- **New Policy Creates a Financing Mechanism for Multi-User Interconnection Facilities.**
- **Removes Major Impediment to Development of Grid-Connected Renewable Energy Resources.**

FERC Has Adopted “Anchor Customer” Model

- **FERC Requirement That Merchant Transmission Owner Allocate All Initial Capacity Through Pre-Construction Open-Season Was Obstacle to Obtaining Financing.**
- **Permitting “Anchor Customer” to Contact for Capacity Without Open-Season Facilitates Financing of Transmission Projects.**

FERC Addressed Delays in Analysis of Interconnection Requests.

- **Processing by Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) of Requests for Generation Projects Was Delaying Renewable Generation Projects.**
- **FERC Required RTOs and ISOs to File Reports on Backlogs and Their Efforts to Expedite Interconnections.**

Transmission Grid Access and Cost Allocation Policies

- **Key Policy Area for Growth of Electric Generation Using Renewable Energy**
- **Transmission Policies In The U.S. Have Been “Evolving.”**
- **Transmission Access, Cost of Interconnection and New Transmission Facilities, and Transmission Rates and Services.**
- **FERC Policy Direction Supports More Renewable Resource Generation.**

Thank You.

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