

Comments on Renewable Generation Integration

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Outline of Talk

- Three issues currently under consideration at California ISO
 - Pricing granularity to loads
 - Capacity Payment Mechanism (CPM)
 - Renewable Generation Integration
- Provide comments on each topic (not official Market Surveillance Committee) opinion

Renewable Integration

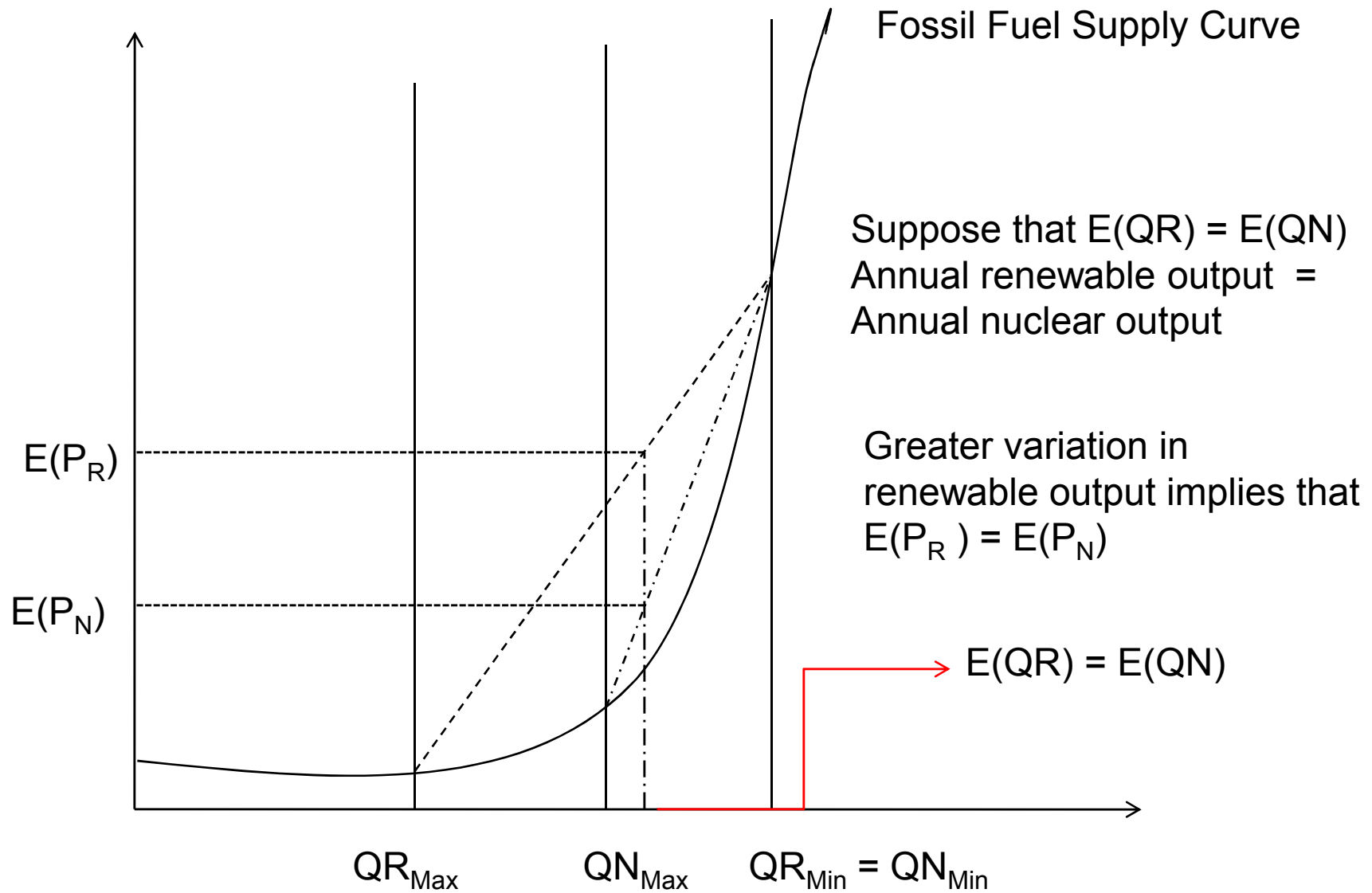
Renewable Integration

- State-level renewable portfolio standard (RPS) require a certain fraction of retail energy to come from renewable resources
- Least-cost approach for California consumers is to separate production of renewable energy credits (REC) from production of energy
 - 1 MWh of renewable energy produced anywhere in WECC allows producer to sell 1 MWh of REC
- Retailers simply purchase energy at least-cost and enough RECs to meet their RPS requirement
 - Rather than force construction of renewable generation units in California where renewable energy may be more expensive to produce
 - Avoids raising cost of renewable energy and managing system reliability in California by requiring “dynamic transfers” from neighboring control areas

Renewable Integration

- Important Point--Renewable mandates can be expected to reduce wholesale prices, but less than would be the case under an alternative technology-based mandate that produces the equivalent amount of energy annually
- Compare a 33 percent RPS to 33 percent nuclear energy portfolio standard
- Claim--Expected wholesale energy prices are lower under the 33 percent nuclear energy portfolio standard versus the 33 percent renewable energy portfolio standard
- Conclusion—Technology based-mandates, not just renewable mandates can depress wholesale electricity prices

Renewable Integration



Renewable Integration

- Conclusion--Renewable integration creates an ideal opportunity for active participation of final demand in wholesale market to benefit final consumers
 - Dynamic retail pricing can allow renewable integration to be managed at least cost to California consumers
 - Allows existing generation unit owners to earn sufficient revenues to recover costs due to active participation of dynamic pricing customers
 - Default dynamic pricing to final consumers makes necessary storage and load-shifting investments needed to manage renewables integration profitable
- Pure supply-side solutions to renewables integration will be extremely costly to consumers
 - Cannot protect consumers from time-varying wholesale prices

For More Information

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