



Introduction to Optimum Renewables, LLC & Overview of Distributed Generation Projects



Presentation Outline

- Optimum Renewables Mission & Management Team
- Overview of Distributed Generation (DG) Projects
- Complexities of DG projects
- Outlook for DG projects
- Open Discussion



Mission

- Optimum Renewables, along with industry partners, is focused on developing renewable energy projects in North America.
- Optimum Renewables works with investors, land owners, developers, manufacturers, service providers, utilities and transmission companies to integrate solar and wind projects into the North American electrical grid.



Management Team

- The two members of Optimum Renewables senior leadership share a passion for business, customer service, and engineering that is unmatched in the power industry.
 - Steve Thompson, CEO. Steve is an Electrical Engineer by education and an experienced executive leader though a long record of business success.
 - Esther Reinders, CFO. Esther has a degree in Chemical Engineering and Masters in Business, with strong financial management and customer relations success.
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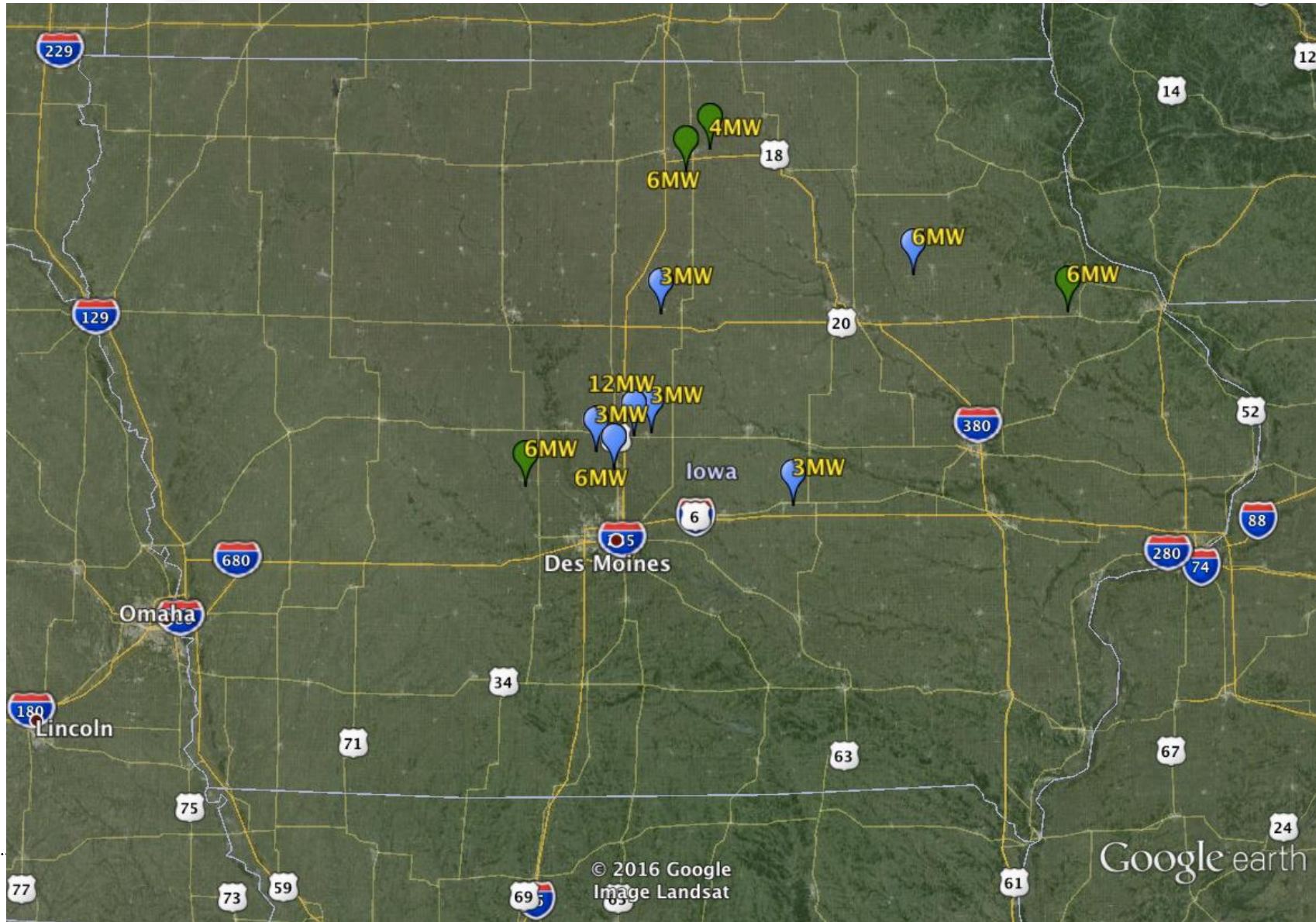


My Background

- 17 years in the Oil & Gas Industry. V.P System Engineering for Compressor Controls Corp..
- 5 years Wind Turbines Operations and Maintenance CEO of Availon, inc.



Present Project Locations





Present Project Photos





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Overview of Distributed Generation (DG) Projects

Distributed generation (DG) refers to power **generation** at the point of consumption. Generating power on-site or close to load centers, rather than centrally, eliminates the cost, complexity, interdependencies, and inefficiencies associated with transmission and **distribution**.

Microgrids are modern, localized, small-scale grids, contrary to the traditional, centralized electricity grid (macrogrid). Microgrids can disconnect from centralized grid and operate autonomously, strengthen grid resilience and help mitigate grid disturbances.

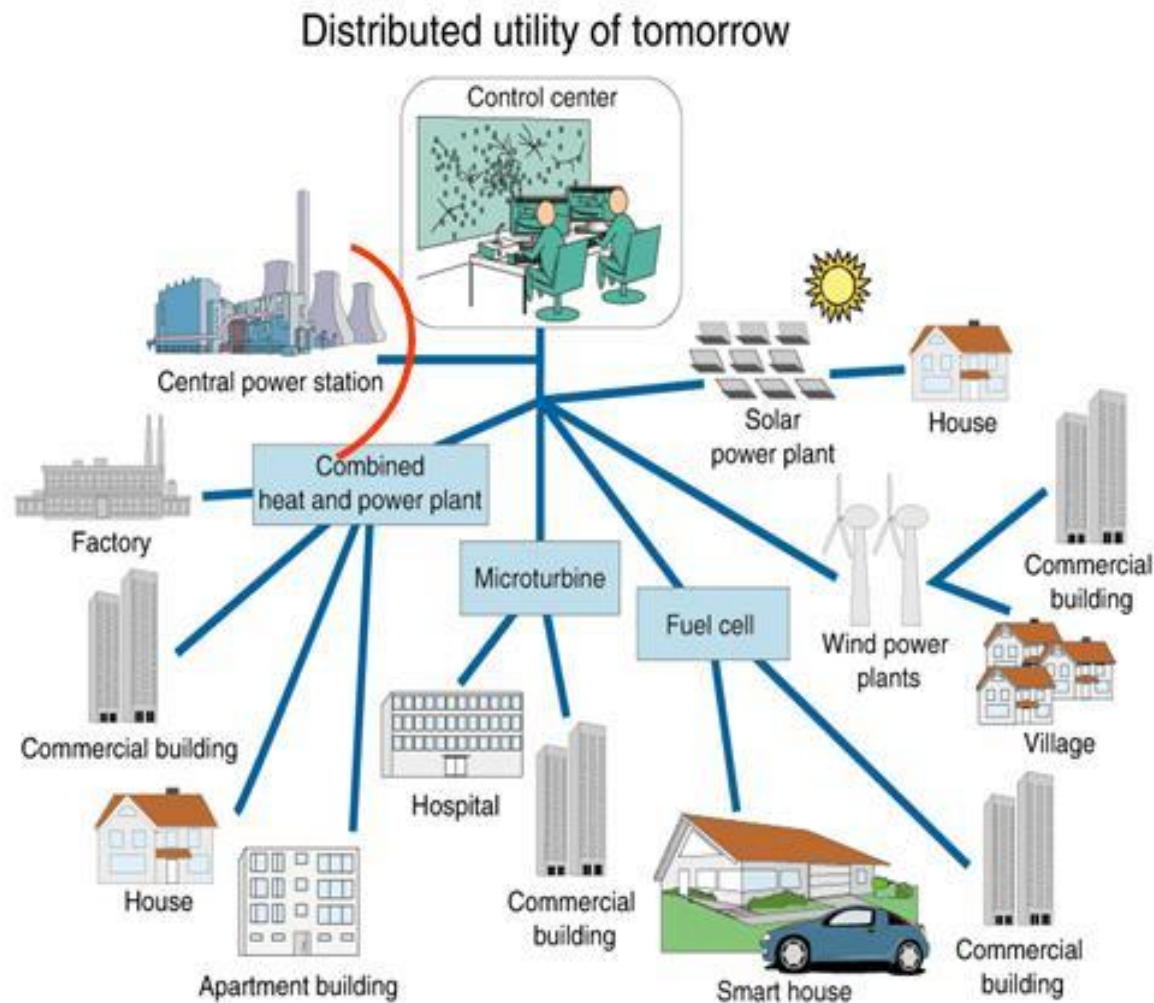


Overview of Distributed Generation (DG) Projects

- Smaller projects normally 2MW-8MW, rarely more than 20MW
 - Interconnection is made at distribution Voltage Levels normally 12KV to 24KV
 - Interconnection is done at a “Point of Interconnection” (POI) and does not require a substation. DG owner is responsible for the POI. Utility is responsible for upgrades to the POI.
 - Most are built around PURPA (Public Utilities Regulatory Policy Act of 1978) regulations
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Overview of Distributed Generation (DG) Projects





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Complexities of (DG)Projects

- Smaller projects lead to increased project costs per MW
- Interconnection costs are high: \$400k to \$1,500k
- Finding the right land for the turbines close to a substation with adequate load
- Project IRR's often too low to attract investors
- Projects too small to attract tax equity investors



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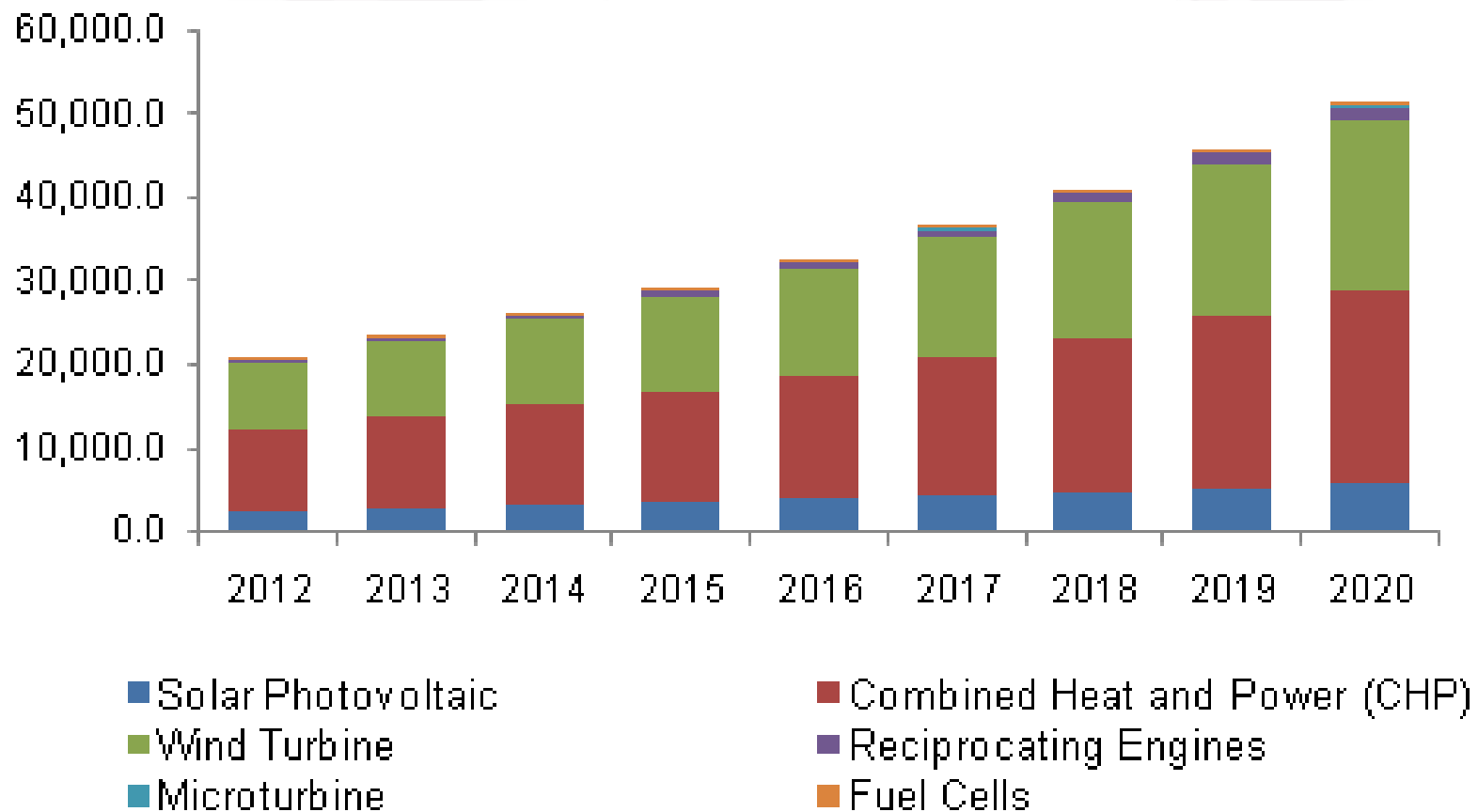


Outlook for (DG)Projects

- States will need to encourage these type projects with incentives to make them financially viable.
- Most Utilities are looking for ways to discourage this type of project: Delays in the interconnection process, high interconnection costs, lowering their avoided cost rates
- Low fuel prices and the diminishing Federal Production Tax Credit (PTC) will make DG projects more difficult



Outlook for (DG)Projects





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