

The Potential Benefits of Distributed Generation to the Electric Grid

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Introduction

- What is the Energy Future Coalition?
- What is the Energy Future Coalition doing with regard to the coming electric industry transition?
- Defining “Distributed Generation”
- Defining “the Grid”
- Defining “Benefits to the Grid”
- Defining “Potential”

The Potential Benefits of DG

Individual benefits:

- Improved reliability
- Lower energy costs
- Less energy cost volatility
- Greater autonomy
- Thermal energy output (CHP)
- Ability to participate in power markets
- Can be sized and matched to individual applications
- Can potentially support DC applications

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Societal Benefits:

- Reduced grid congestion (deferred T&D investment)
- Reduced land-use impact
- Lower capital cost per KW than central system (by avoiding new T&D)
- Reduces line losses
- Reduced system vulnerability
- Supports competitive electric industry structure
- Short lead-time operation
- Off-the-shelf technologies
- Load-following modular technologies

The Potential Benefits of DG

Potential benefits:

- **Potential for transportable emergency generation units**
- **Potential for new high-tech manufacturing & export sector**
- **Potential for optimization of natural gas supply and infrastructure**
- **Potential to match to thermal storage units**
- **Potential for reduced emissions per unit of useful output**

Conclusions

- There are and will be many distributed generators to integrate into the distribution grid.
- Emerging technologies will allow integration of a host of distributed generators as well as demand response resources.
- The central grid will remain important for all but a few remote customers who have distributed generation.
- There are benefits to distributed generators from remaining on the grid and benefits from distributed generation to the grid.
- Cost allocation should reflect the benefits in both directions.
- Cost allocation and selective discounts should not be used in an effort to suppress distributed generators, nor as a means of subsidizing them.