



Power is Going Local with Energy Improvement Districts

Fact Sheet

Energy Improvement District (EID)

A USCM/Pareto Energy organizational innovation: EIDs combine the tax advantages of a business improvement district with the regulatory benefits of publicly-owned power. The efficiency inherent in aggregating businesses in an EID provides its members with immediate cash flow via reduced energy expenditures and avoided costs of power outages.

Distributed Energy Resources

Local actions and investment undertaken by EIDs for more affordable, reliable electric power:

- 1) **Distributed Generation:** install clean micro generation equipment at or near its point of use. Payback to investment: 3-5 years.
 - a) Recapture generator heat for building heat and cooling demands (with a heat exchanger) boosts efficiency versus central power from 30 to 75% efficiency.
 - b) Interconnect to the grid as backup for ultra reliable power.
- 2) **Demand Management:** invest in energy saving equipment and practices. Payback to investment: 1-2 years.
- 3) **Demand Response:** take a payment to curtail electric use when the local utility or transmission operator is short of power. Payback to investment: instant.
- 4) **Load Substitution:** substitute gas for electric appliances (i.e., gas chillers for electric air conditioning). Payback to investment: 3-5 years.

Economic Development Impacts

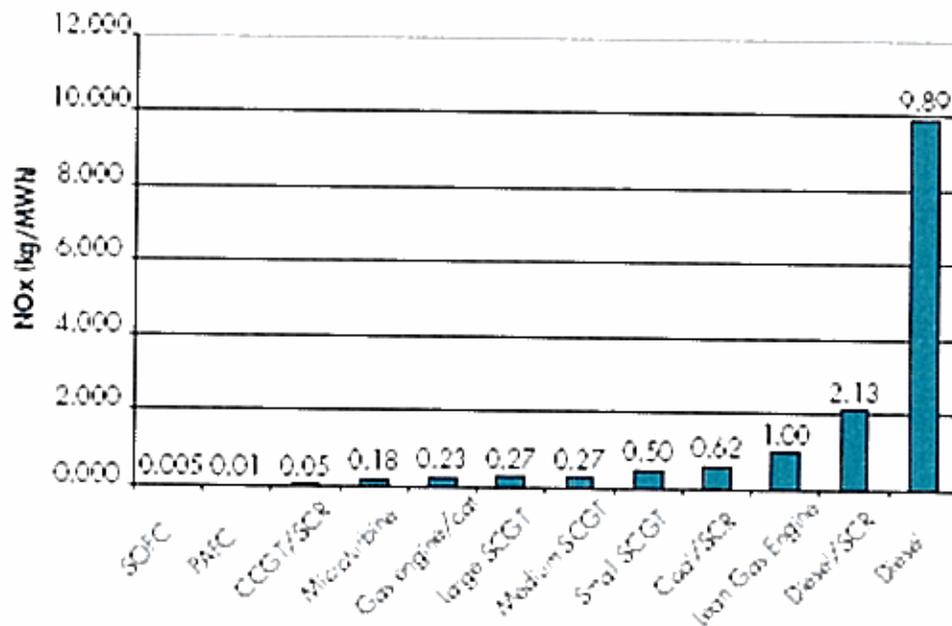
- 1) Distributed resources deployed at or near the use of power curb the three drivers of high electric power costs: fuel costs, transmission and distribution system upgrades and air emission compliance.
- 2) For new developments, distributed generators can be deployed in half the time of grid utility upgrades and in exactly the right modules needed for new buildings.

- 3) Highly reliable power helps retain and attract high technology businesses
- 4) Energy efficient buildings correlate with high labor productivity.
- 5) Dispersed distributed generators with no single point of failure

Environmental Impacts

- 1) Distributed resources can add up to 13 points to Green Building Council LEED certification
- 2) Distributed Resources Earn Climate Change Credits for CO² reductions
- 3) Local gas fired distributed generators have ultra low air emissions compared to diesel or gas and coal fired central generation :

NO_x Emissions from Distributed-Generation Technologies (kg/MWh)



Notes: SCGT = simple cycle gas turbine, SOFC = Solid Oxide Fuel Cell, PAFC = Phosphoric Acid Fuel Cell, Lean Gas engine = lean fuel mixture gas engine, Gas engine/cat = Gas engine with three-way catalyst /SCR = with selective catalyst (NO_x reduction technology. Source: RAP 2001 (www.rapinc.com) except Coal/SCR from new US EPA Standard (0.15 lb./mmBTU) assuming net efficiency of 37% (including transmission and distribution losses). Assumed CCGT efficiency of 51% includes transmission and distribution losses.