Distributed Generation in the Grid of the future

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The E&TS Vision

- "Engineering, technical and business excellence to achieve perfect safety and reliability at less than today's delivery cost."

CHP application

Alloy Processing

SCE's Customer Generation Base has Expanded Since 1998

Technology	Interconnections as of 12/31/03		Projects in Development	
	Number of Projects	Total kW	Number of Projects	Total kW
Microturbines	41	6,486	15	2,547
Gas Turbines	1	1,770		
Internal Combustion Engines (< 5,000 kW)	75	83,025	59	51,278
Large Projects (IC-GT ≥ 5,000 kW)	7	99,296	4	39,691
Fuel Cells	2	10	1	416
Small Hydro	1	643		
Combined Technologies (PV/GT)	3	8,555		
Solar (PV & Wind) (includes NEM)	1,937	12,742	196	1,930
Total	**2,067**	**212,527**	**275**	**95,862**

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Where DG can make sense

- CHP (Combined Heat and Power)
- "Free" energy
  - Landfills, Process gas
  - Solar, Wind, Small Hydro
- Remote Location
- Peak shaving w/Standby DG
- To defer large distribution up grades
- Emergency power assurance

DG Challenges

- Finding a “win-win” strategy for both the DG user, other customers, and the utility
- Integration of DG communication and control into a utility system
- Load assurance requirement

SCE & DG - going forward

- **Formed a DG Team within T&D to:**
  - Ensure that T&D planning incorporates DG
  - Continue leading role in testing and evaluation
  - Provide mitigation measures for overloaded distribution equipment

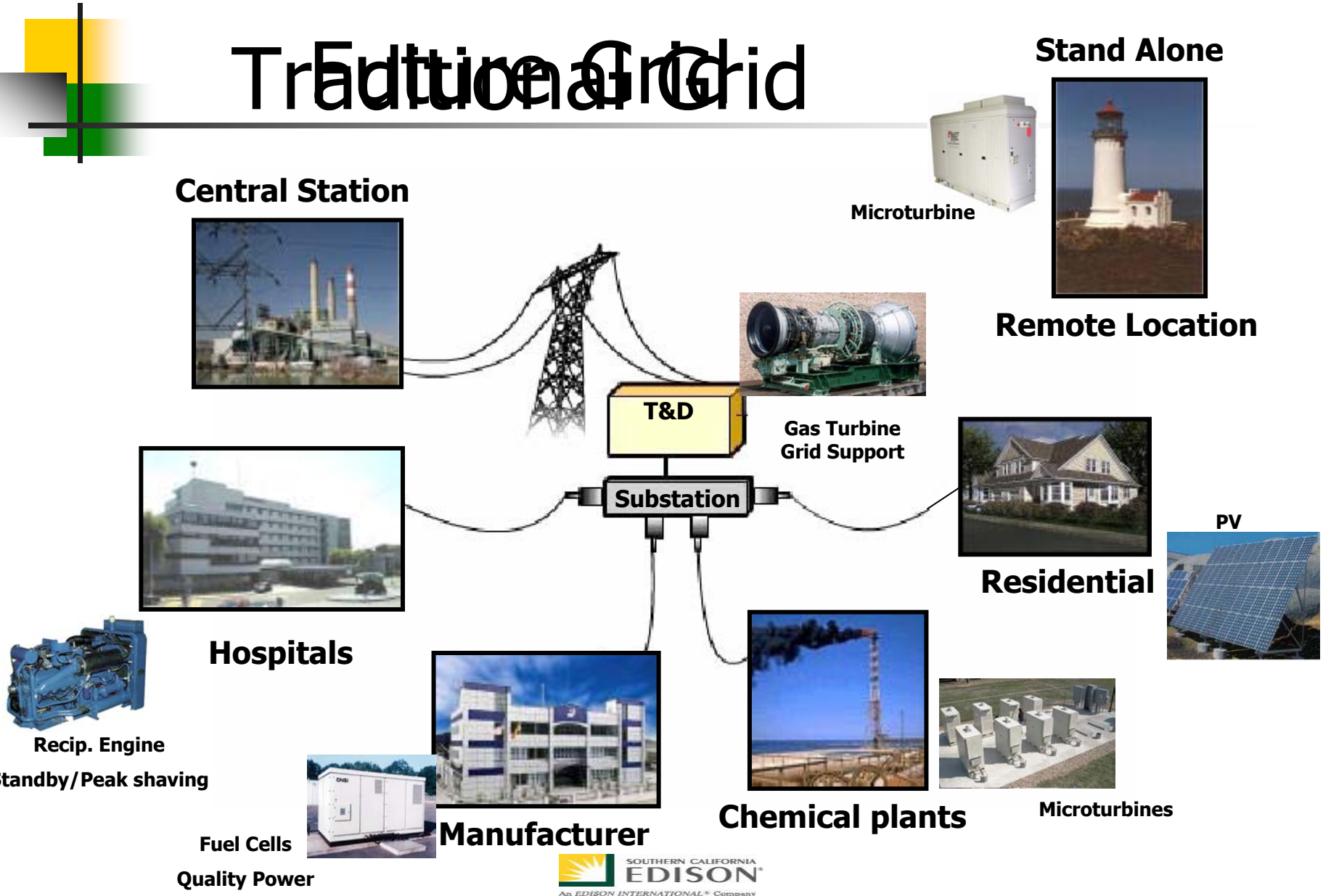
SCE and DG - going forward (continued)

- SCE facilitates the interconnection of customer generation to its grid
- SCE offers a reasonable & expeditious interconnection process
- SCE interconnection rules have been standardized and streamlined under California Rule 21

SCE and DG – going forward (Summary)

- SCE supports DG when it is:
  - Economically Sound
  - Environmentally sound

Future Grid



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Future Grid

- More reliable
- Safer
- Improved economy
- Better power quality
- Environmentally responsible

Q&A

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