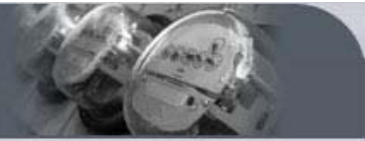




IEA DRR Task XIII



| Technology | Residential energy management | Commercial peak-load reduction (typ. min. 100 MW) | Load Curtailment & shifting | |
|--|-------------------------------|---|-----------------------------|-----|
| | | | Energy suppliers | TSO |
| Metering and Communication | | | | |
| Advanced meters, including Sub-meters | X | | | |
| Interval meters | | X | | |
| Energy information systems – involving meters, sub-meters | | X | | |
| Automated Meter Reading (AMR) | | | X | |
| Gateways (for pulse output of utility meter) and specialized analytical software (either licensed or via vendor ASP services). | | X | | |
| Highly integrated approaches for event notification | | | | X |
| Expanded use of broadband technologies for automated load control. | | | X | |
| Energy Management | | | | |
| Whole house energy systems | X | | | |
| Energy management systems | | X | | |
| Smart thermostats | X | | | |
| Financial incentive payments for business Customers to install energy efficiency equipments & upgrades (typically – lighting, HAVC, motors & energy storage devices) | | | X | |
| Geothermal heat pumps | | | X | |
| Incentives for permanent demand reduction efforts | | X | | |
| Standard performance contracting programs | | | X | |
| Generation of electricity | | | | |
| Dispatchable emergency generators | | X | | X |
| Combined heat and power generation applications (CHP) | | | X | |
| Wind and photovoltaic supplement systems | | | X | |
| Load Control | | | | |
| Direct load control of air conditioners and water Heaters | X | | | |
| Cycling of commercial air conditioners | | X | | |
| Ice storage & bldg. thermal storage | | X | | |
| Load curtailment –shifting | | X | | |
| Large customer interruptible programs | | | X | |
| Voluntary and mandatory load reduction programs | | | X | |
| Demand buy-back programs | | | X | |
| Regional black-out reduction programs | | | X | |
| Reserve capacity programs with incentives for large customers to curtail load or operate onsite generation during electricity reserve shortages. | | | | X |
| Day ahead demand response programs which give larger customers the opportunity to bid load reductions into a regional market's day-ahead wholesale electricity market – Note: In some day ahead programs running standby generators is not | | | | X |

| | | | | |
|---|----------|--|--|----------|
| permissible | | | | |
| Systems implementation and control strategies via new systems | | | | X |
| Verification of Load Control | | | | |
| Load control and load reduction verification | | | | X |
| Verification through load profiling and sample-based spot metering applications | | | | X |
| Marketing and Education | | | | |
| Highly integrated approaches to the marketing of demand response programs | | | | X |
| Technical & educational assistance | X | | | |

An energy provider and system operator demand response “toolkit” consists of:

- Automated meter reading (AMR) equipment
- AMR software
- Load curtailment management system software
- Meter verification editing & estimation systems
- Settlement systems
- Advanced billing systems
- Load information systems
- Load profiling systems
- Distribution & transmission load planning tools
- Next day forecasting tools
- Customer demand response forecasting tools

There are five basic components of any successful demand response program:

1. Notification
2. Real-time/non-real-time metering
3. Compliance of performance
4. Baseline calculation
5. Settlement