



2013 Capital Projects
*** This information is also contained in the budget book

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| Capital Project | Amount * |
| Outage management system (OMS) phase 3 | Large |
| Incorporate current manual workarounds into Siemens products to improve performance and support | Large |
| Resources Interconnection Management System (RIMS) enhancements 2013 | Large |
| Energy management system (EMS) enhancements | Large |
| Enterprise model management systems (EMMS) phase 3 | Large |
| Improve forecasting tools (ancillary services, flexible ramping) | Medium |
| Operational meter analysis and reporting (OMAR) new features, corrections, and automation | Medium |
| Market validation tools phase 2 and 3 | Medium |
| Topology estimation tool | Small |
| Secondary e-tagging system for robustness | Small |
| PROBE Enhancements | Small |
| Operations enhancements 2013 | Large |
| Non-generator resources (NGR) in ancillary services market requirements - regulation energy management (REM) - | Lorgo |
| dispatchable demand response (DDR) | Large |
| Flexible ramping (market product) / simultaneous residual unit commitment and integrated forward market | Large |
| Intertie pricing and settlement | Large |
| Outage coordination (optimization) | Large |
| Extending the network model | Medium |
| Bid cost recovery / renewable integration market & product review (RIMPR) phase 1 | Medium |
| Blackstart restoration phase 1 and phase 2 | Medium |
| Exceptional dispatch mitigation in real time | Medium |
| Market services enhancements 2013 | Medium |
| Participating intermittent resource project (PIRP) decremental bidding | Medium |
| Subset of hours for all resources (includes updates to exceptional dispatch) | Medium |
| Standard capacity product phase 3 | Small |
| Decoupling of short term unit commitment (DSTUC) extended to 9 or 10 hours | Small |
| Circular scheduling | Small |
| Default energy bids (DEB) enhancements | Small |
| Enhanced generation contingency model for markets | Small |
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| Replacement requirement for generation outages - phase 2 automation | Small |
| Marginal loss surplus allocation | Small |
| Price consistency improvements | Small |
| Secured credit changes for convergence bidding | Small |
| Constraint parameter enhancement | Small |
| Administrative pricing rule | Small |
| Ancillary services (AS) buy back | Small |
| Flexible capacity procurement | Small |
| Architecture: consolidation of multiple overlapping applications, improve operational monitoring dashboard | Large |
| Enterprise hardware and software purchases | Large |
| Upgrades to Oracle eBusiness suite software – human resources, finance, procurement and market clearing | Large |
| Corporate systems enhancements | Medium |
| Master file enhancement phase 2 | Small |
| Testing automation phase 3 | Small |
| eDiscovery for Legal | Small |
| Customer inquiry, dispute and information (CIDI) functionality enhancements | Small |
| Compliance automation and controls governance, phase 3 | Small |
| Update FERC electronic quarterly report (EQR) software | Small |
| Technology pilots and demonstrations (including micro grid, demand response, and energy storage) | Medium |
| Smart Grid California Energy Commission (CEC) phasor project | Medium |
| Synchrophasor research and development | Small |
| Cost-effective measurement infrastructure project | Small |
| Smart Grid - dynamic thermal line ratings project | Small |
| Grid index - price-responsive wholesale to retail demand project | Small |
| Price consistency improvements | Small |
| Operational impacts of distributed energy resources (DER) at scale | Small |
| Program Office project management costs | Large |
| Annual request for facilities costs | Small |
| Total | Giliali |
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^{*} Note: The costs of the individual projects are not shown, but are categorized by size as follows: small projects under \$500k, medium projects from \$500k to \$1 million, and large projects over \$1 million. The actual projects completed during 2011 will vary, including the potential addition of projects not on this list, the deferral of projects on this list to future years, or the elimination of projects on this list if no longer necessary.