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Regulatory, Legislative, Collaborative & Organic Drivers for NWA in the US

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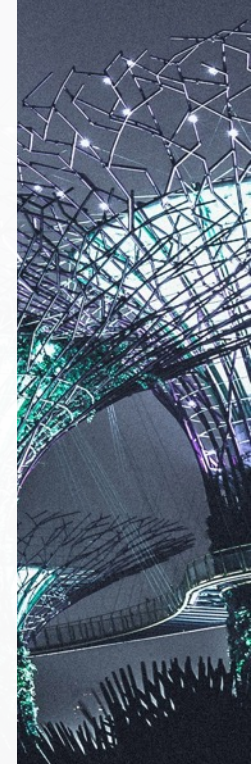
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Regulatory Driven Process

New York

Distribution System Implementation Plans

- Approve utility-specific BCA Handbook
- Utility proposes any project that passes its BCA
- Streamlined approvals, premium return possible

Central Hudson Proposals

Project Name/Description	Project Type	Need Timing	Project Size	Procurement & Development Timeline	Estimated RFP Timing
Coldenham / Distribution Feeder Upgrade	Load Relief	Dec 2019	Small	34 months	Mar 2017 (NWA Currently Underway)
Philips Road / Substation	Load Relief	May 2018	Large	42 months	Nov 2014 (NWA Currently Underway)
Northwest Corridor / Transmission Upgrade	Load Relief	May 2019	Large	54 months	Nov 2014 (NWA Currently Underway)
Merritt Park / (2) Distribution Feeder Upgrades	Load Relief	May 2019	Small	54 months	Nov 2014 (NWA Currently Underway)

Central Hudson Case Study

Phillips Road Project

- This system need and project was identified during the 2015 planning process.
- To successfully defer a new substation, 5 MW of load relief is needed by 2018.
- Solicitation occurred in 2014, leading to the implementation of a targeted demand management program.

NY Microgrid Example

Orange and Rockland, NY

- 17 MW microgrid defers substation
- Solar, Fuel Cells, EE, DR and storage solicited
- 60 minute responsiveness required



Regulatory Driven Process

California

Distribution Resource Plan

- CPUC defined demonstration project scope
- Utilities required to include distribution investment deferral process
- Competitive procurement, capitalize contract cost at modest return (~4%)

Collaborative PG&E and EBCE Project

- The PG&E and East Bay Clean Energy project, the Oakland Clean Energy Initiative (OCEI)
- Replaces a retiring 165 MW Dynegy gas peaker, obviates need for 115 kV and 230 kV transmission
- Combination of resources includes:
 - 25-40 MW combination of EE, DR, PVDG (minimum 19 MW of load reducing response)
 - 10 MW/40 MWh storage
 - Substation upgrades and line re-ratings

Competitive solicitation determines compensation

- PG&E gets to build and dispatch the storage, as well as the distribution system upgrades
- 25 to 40 MW of DERs procured through competitive solicitation and compensated according to bids

Saves ratepayers money

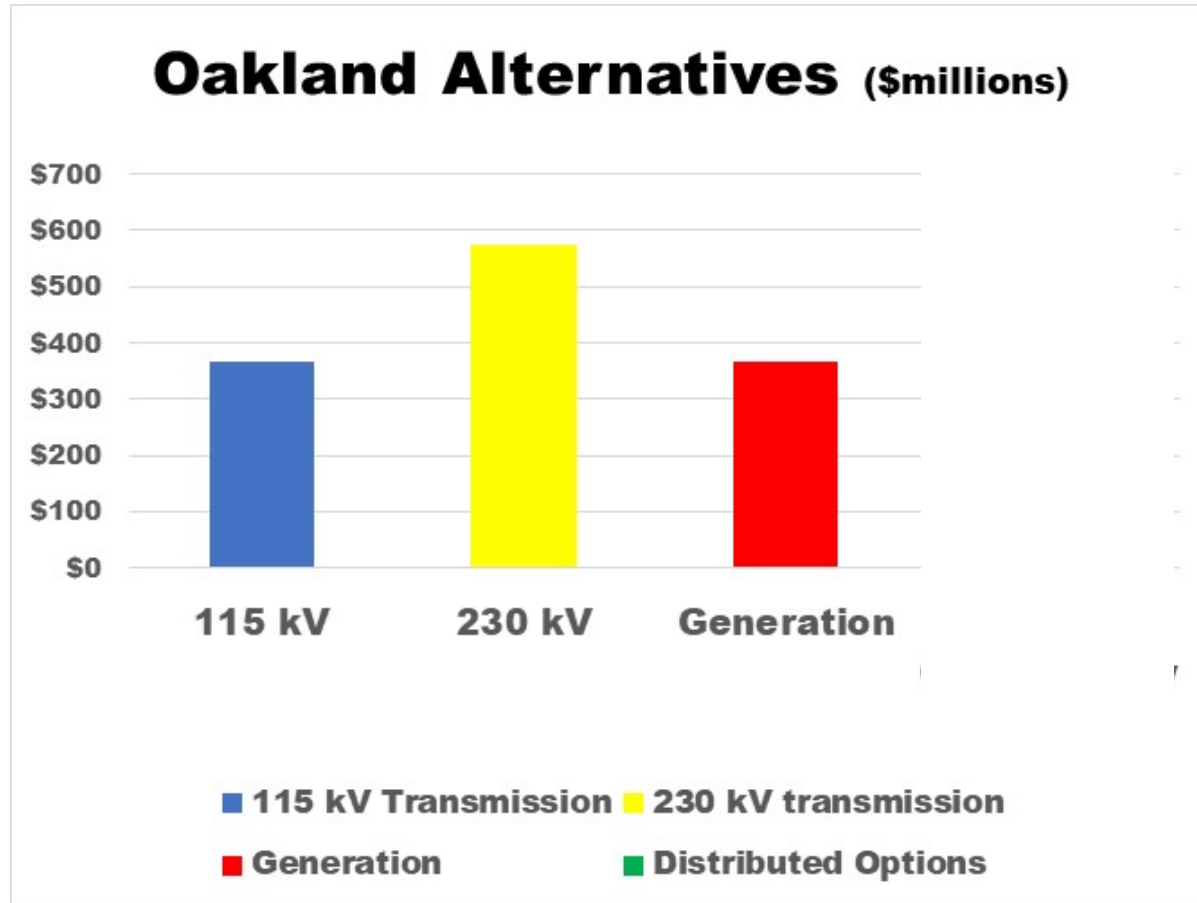
Table 2.5-23: Estimated Cost of Alternatives

	Estimated Capital Cost (2022 \$M)	Total Cost (2022 \$M)
OCEI	\$56-\$73 ¹	\$102 ²
115 kV	\$193-\$217	\$367 ³
230 kV	\$316	\$574 ⁴
Generation	\$232	\$368 ⁵

CAISO approves clean energy, storage and system upgrades to replace peaker plant, PV Magazine, March 29, 2018 <https://pv-magazine-usa.com/2018/03/29/caiso-approves-clean-energy-storage-and-system-upgrades-to-replace-gas-plant/>

Request for Offers Launches for Oakland Clean Energy Initiative, Business Wire, April 13, 2018 <https://www.businesswire.com/news/home/20180413005630/en/Request-Offers-Launches-Oakland-Clean-Energy-Initiative>

... Saving Ratepayers Money and Reducing Emissions



Legislatively Driven Processes

NWA requirements and inferences

- Vermont (2006) –10 Year Forecast of Load Growth Driven T&D with NWA trigger
- Rhode Island (2006) – NWA assessment for all Reliability Upgrades
- Illinois Future Energy Policy Act (2016) – Cost effective DER requirements can motivate NWA investigations

Collaborative Process: BPA

BPA South of Allstom –

- 100 MW of Transmission flow relief needed
- Non-wires process => 89% generation re-dispatch, 11% DR
- Lesson: EE, DR and DER require plan ahead



Organic Process: Public Power

Anza AZ G&T member in southeastern CA

- At the end of a radial line, load growing
- 500 kW, 1 to 4 MWh of storage
- Defers much more expensive upgrades to 2024.

Organic Process: Transactive Market

Avista Shared Energy Economies Pilot

- Spokane's University District
- Solar, Building Management Systems, Battery Storage
- Shared Economy Energy Pilot – Toward Local Transactive Energy

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org



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