



Item 12: DNV USA INC.

December 11, 2024 Business Meeting

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Benefits to Californians

- **Resiliency:** Brine management computer model to reduce downtime
- **Lower energy costs:** Optimization of brine process for lower generation costs
- **Geothermal jobs:** 17 times more jobs than natural gas energy
- **Availability:** System model will be available to California geothermal operators

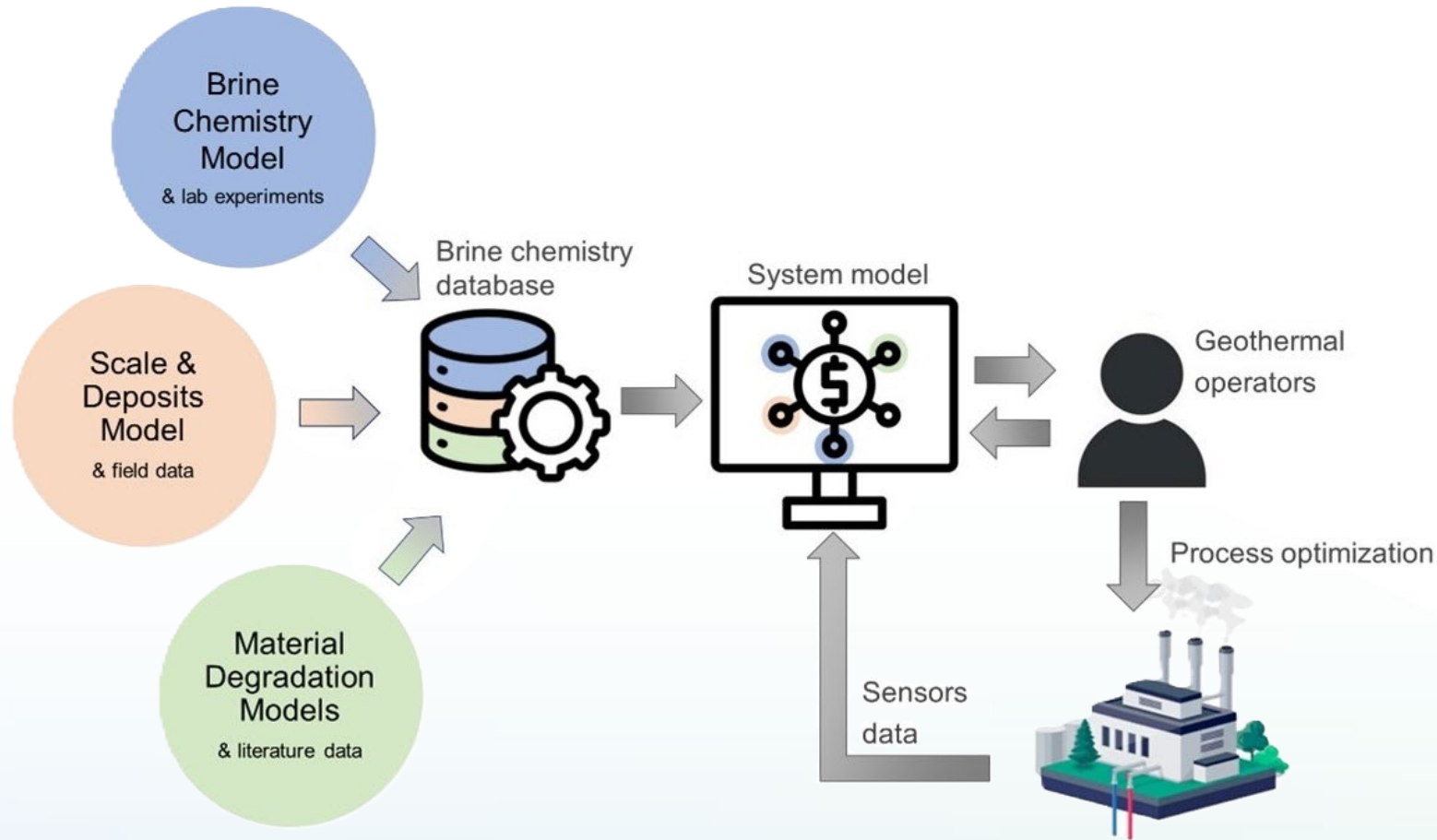
Cyrq Energy Geothermal Plant



Source: DNV USA Inc.



Overview



- Three models combined into one system model
- System model linked to a coupled multielectrode array sensor
- Result: Real-time modeling and assessment of brine system

Source: DNV USA Inc.



Statewide Adoption Potential

- Replicable at all geothermal facilities statewide at **31** geothermal power plants with **~1,600 MW**
- Lower operating expenditures for all existing geothermal power plants statewide by **~\$1.4 to \$4.1 million** annually
- Potential for 25% capital expenditure savings for new geothermal facilities **~\$22.5 to \$37.5 million** for a 30 MW geothermal plant
- Reduction in chemical waste injected in geothermal brines and support use of direct lithium recovery technologies with resource potential **~ 600,000 tons** of lithium per year



Staff Recommendation

- Adopt staff's determination that project is exempt from CEQA
- Approve grant agreement