Weymouth and Jensen Plants Solar Power Generation Projects

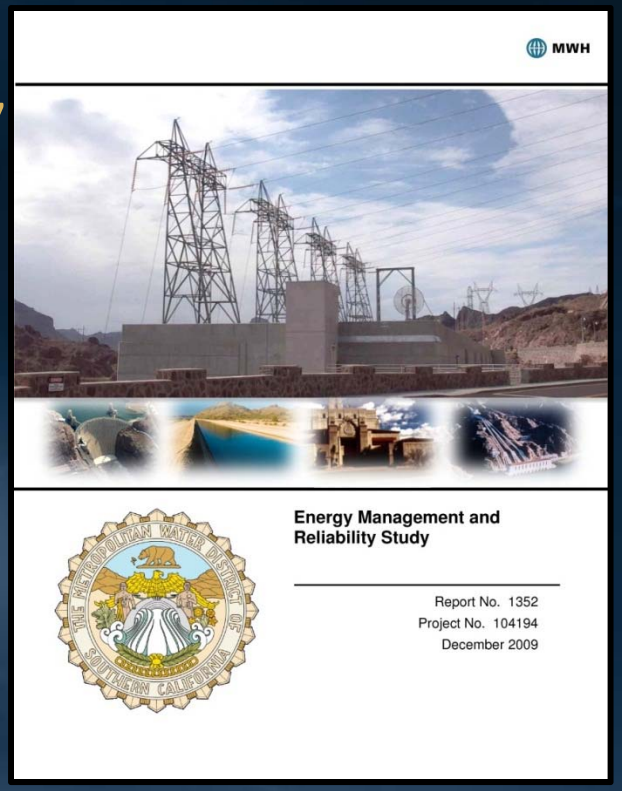
Engineering & Operations Committee
Item 9-1
August 18, 2014

Outline

- Energy Management Policies
- Background
- Proposed Solar Power Facilities
- Solar Power Facilities – Cash flow & Payback Analysis
- Summary
- Next Steps

Energy Management Policies

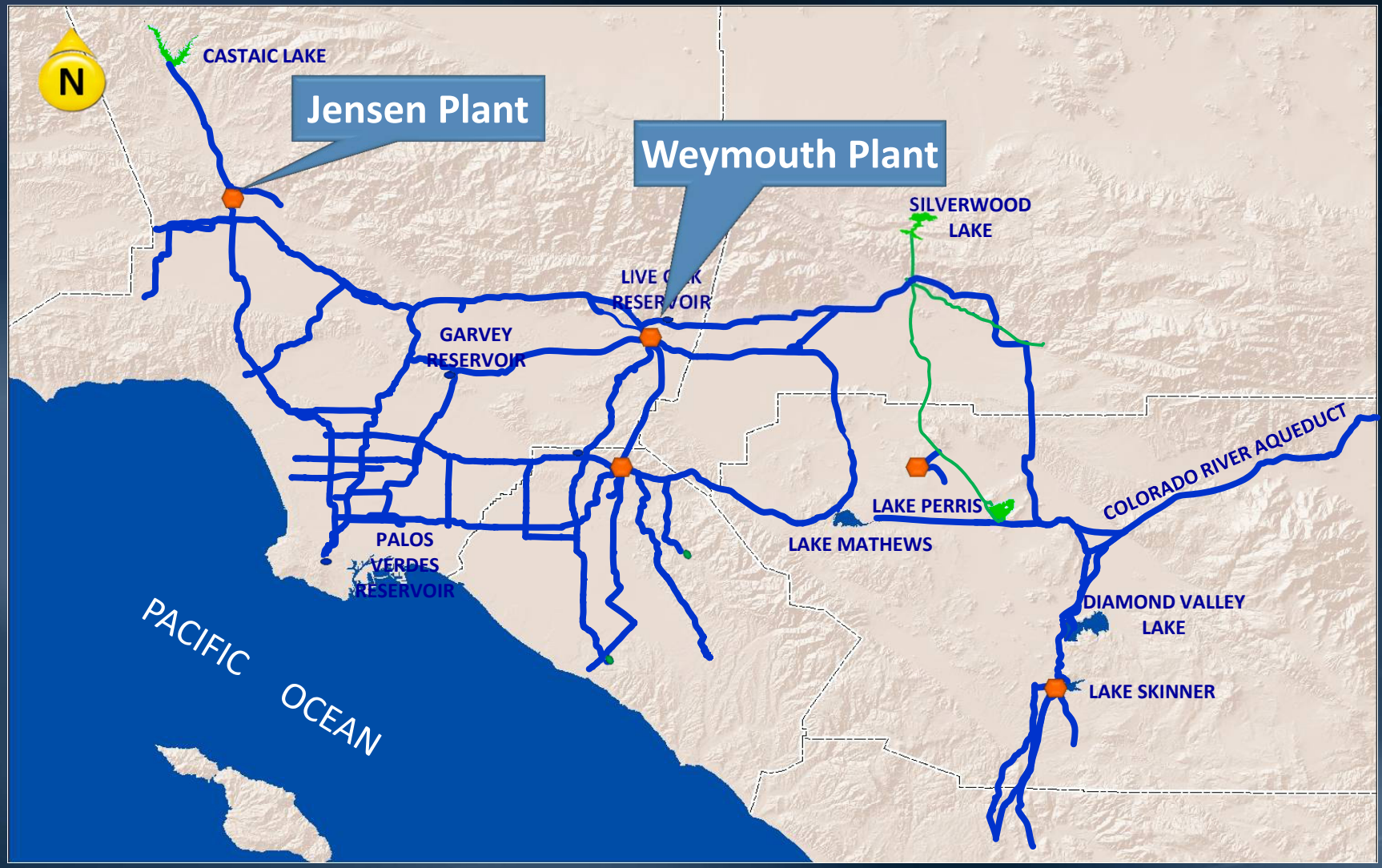
- Adopted August 2010
  - Board Retreat – Energy Issues – April 2007
  - Adoption of Energy Policy Principles – August 2008
  - Strategic Power Plan development - 2009
- Energy Management Policies
  - Hedge against power cost increases & price volatility
  - Track & assess GHG regulations
  - Develop cost-effective alternative energy projects:
    - Energy efficiency & conservation
    - Small hydro energy
    - Solar energy
- An update of EMP is underway



Background

- Cost of PV solar panels reduced significantly
  - 2009 $9/W
  - Current $3.1 to $3.4/W
- Design has evolved
  - Panel efficiency increased: (20% more power density, 50% less degradation)
  - Less land required (5 acres/MW; Skinner required 11 acres/MW)
- California Solar Initiative (CSI) - Rebate program
  - Offered by investor owned utilities: SCE, SDG&E, PG&E
  - Near end of program - step 10 of 10 with SCE @ $0.088/kWh produced
- New incentive programs for government/public agencies
  - SCE Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT)
  - LADWP Solar Incentive Program (SIP) - step 8 of 10 @ $1.45/W installed
- Cost of energy
  - Increasing at a higher rate & greater price volatility
- Expect higher construction costs as economy improves

Distribution System



Weymouth Solar Facility

(SCE Service Area)

- Land available for up to 3 MW
  - 15 acres required
  - 7,700,000 kWh/yr
- CSI Incentive
  - Up to 1 MW
  - Rebate: $0.088/kWh, $1 M
- Energy generation
  - Up to 2 MW system - used on-site
  - 3 MW system - most energy used on-site; remaining exported to credit other Metropolitan accounts with SCE

Jensen Solar Facility

(LADWP Service Area)

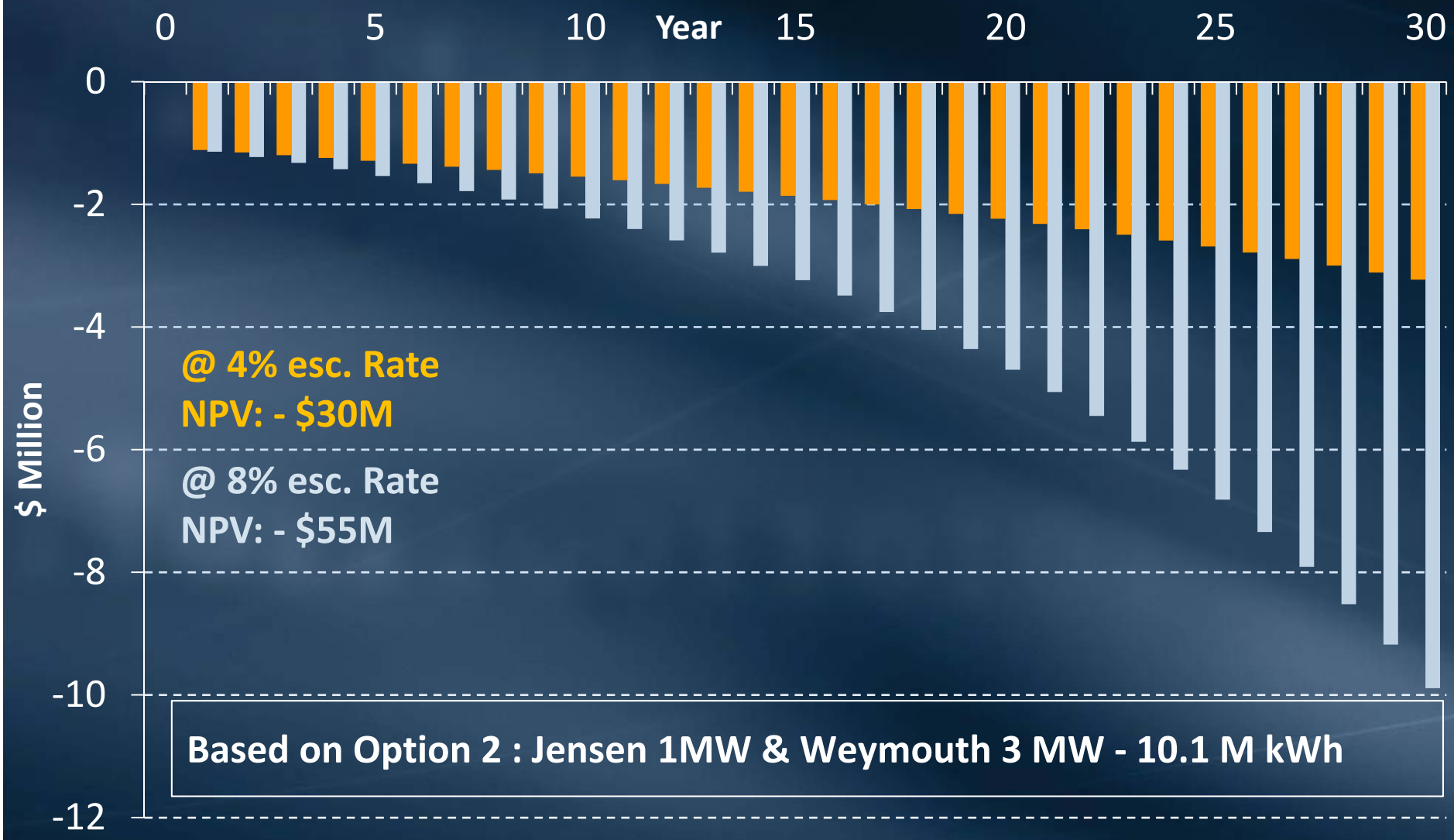
- Land available 6 acres for 1 MW
  - 5 acres required / MW
  - 2,400,000 kWh/yr
- SIP Incentive program – up to 1 MW per meter
  - $ 1.45 / W; design factor 96%
  - $ 1.4 M for each MW installed
- All energy would be used on-site to directly offset full-retail rate

Solar Power Facilities – Options

- Option 1
  - 1 MW at Jensen and 2 MW at Weymouth
  - Total : 3 MW – 7.5 M kWh/yr
- Option 2
  - 1 MW at Jensen and 3 MW at Weymouth
  - Total : 4 MW – 10.1 M kWh/yr

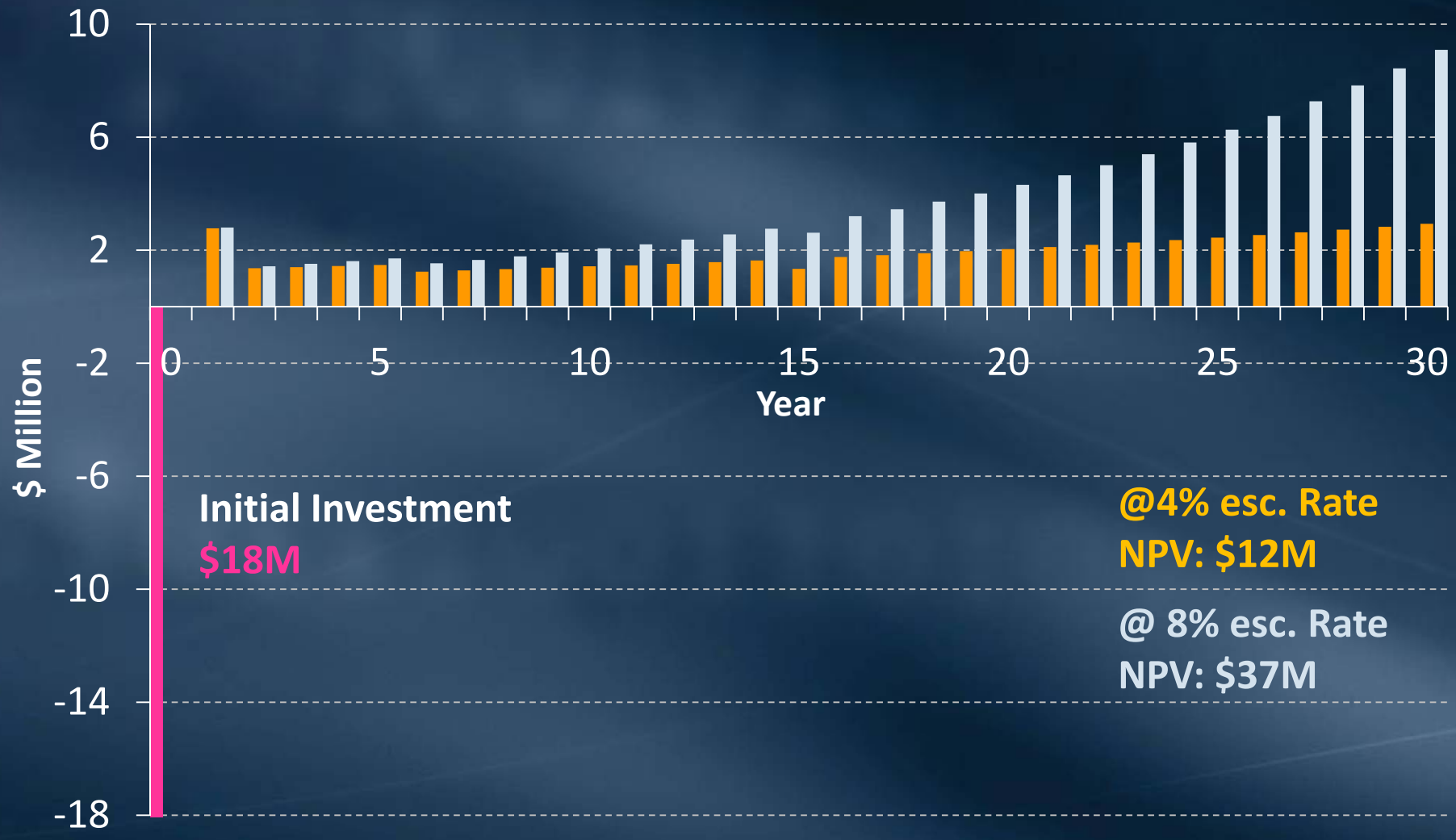
Business Case - Cash Flow Analysis

No Projects - Electricity Cost from the Grid



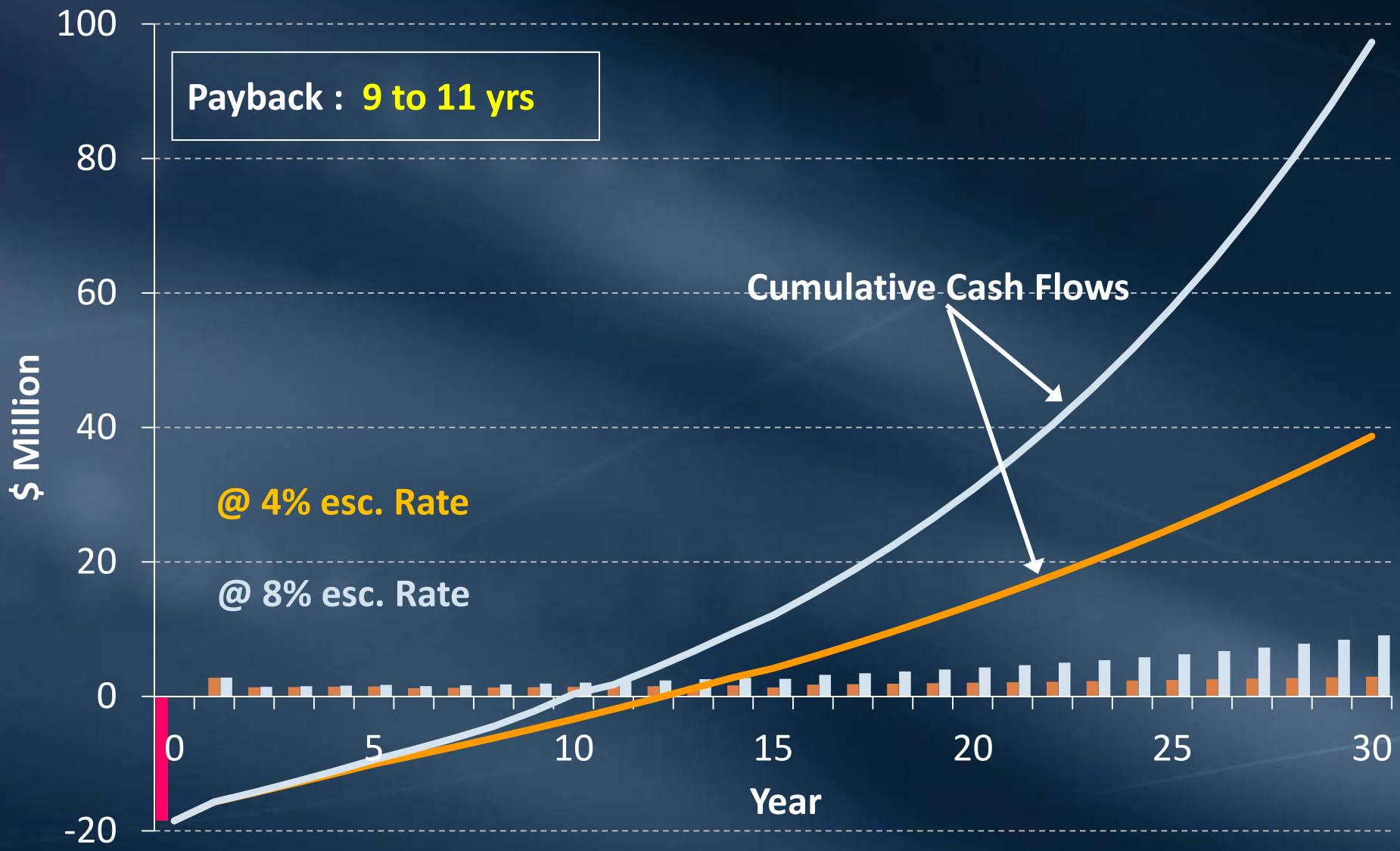
Business Case - Cash Flow Analysis

Option 2 – Jensen 1 MW & Weymouth 3 MW



Business Case – Payback Analysis

Option 2 – Jensen 1 MW & Weymouth 3 MW



Summary

- Window of opportunity for solar projects
- Projects are cost-effective at Weymouth & Jensen
- Provides hedge against power cost increases
- Reduces exposure to energy price volatility
- Reduces Metropolitan's carbon footprint
- Most favorable: Option 2

Next Steps

- Return to Board &recommend projects
- Jensen 1 MW solar facility
  - Apply to LADWP Solar Incentive Program
  - Enter into Interconnection Agreement with LADWP
  - Develop 1 MW facility
- Weymouth 3 MW solar facility
  - Apply to SCE CSI & RES-BCT Programs
  - Request Interconnection Study with SCE
  - Develop 3 MW facility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