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SB100 JOINT SCOPING WORKSHOP
Diamond Bar, CA
October 29, 2019

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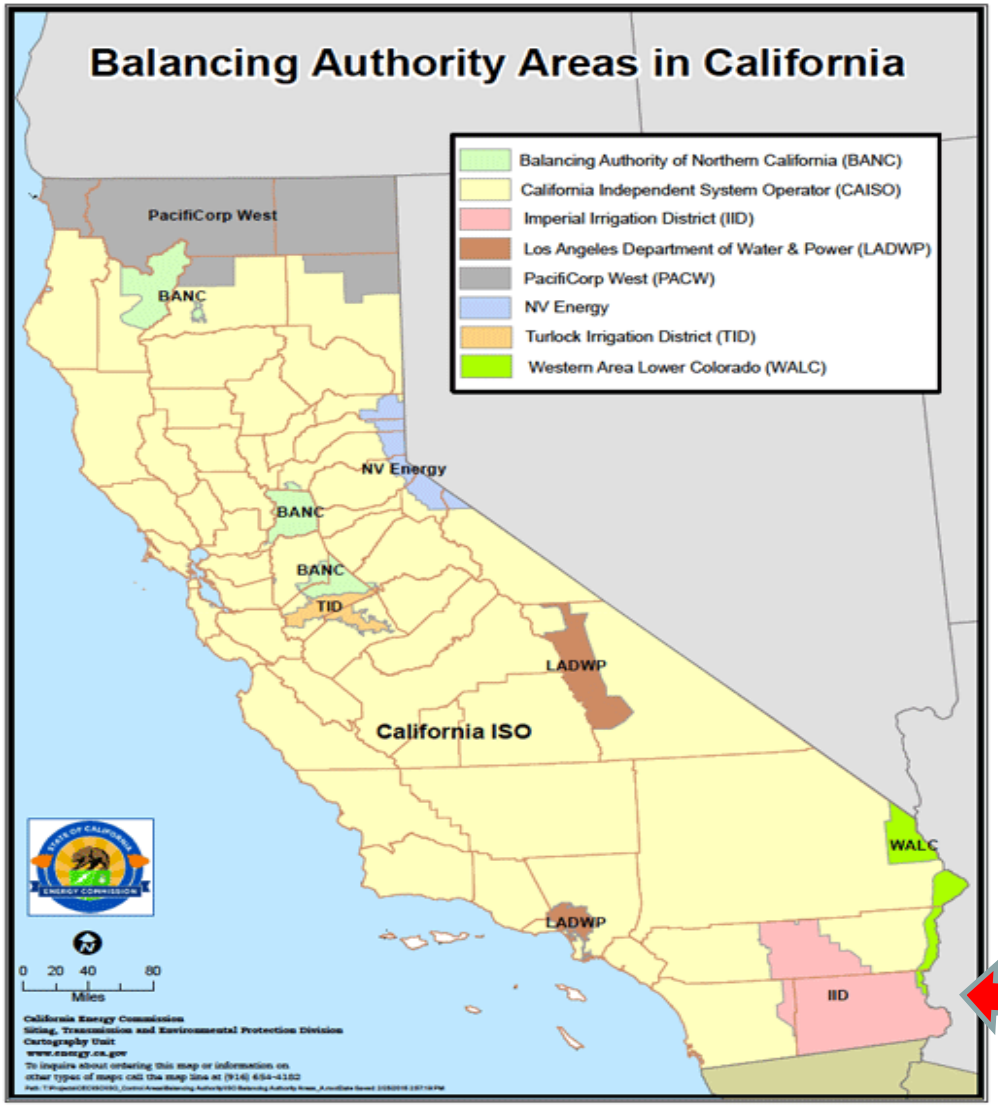
Imperial Irrigation District

About IID

- Located in the southeastern most part of California, IID was formed in 1911 as an irrigation district.
- IID entered the power industry in 1936 when it discovered potential for low-cost hydroelectric energy from falling water drops along the All-American Canal.
- IID currently has more than 157,000 customers (meters) in Imperial and Coachella Valleys. IID serves a total population of approximately 450,000.
- IID's service area is home to significant renewable resource potential; there are installed generation assets providing more than 2,700 MW to load serving entities in California and Arizona.

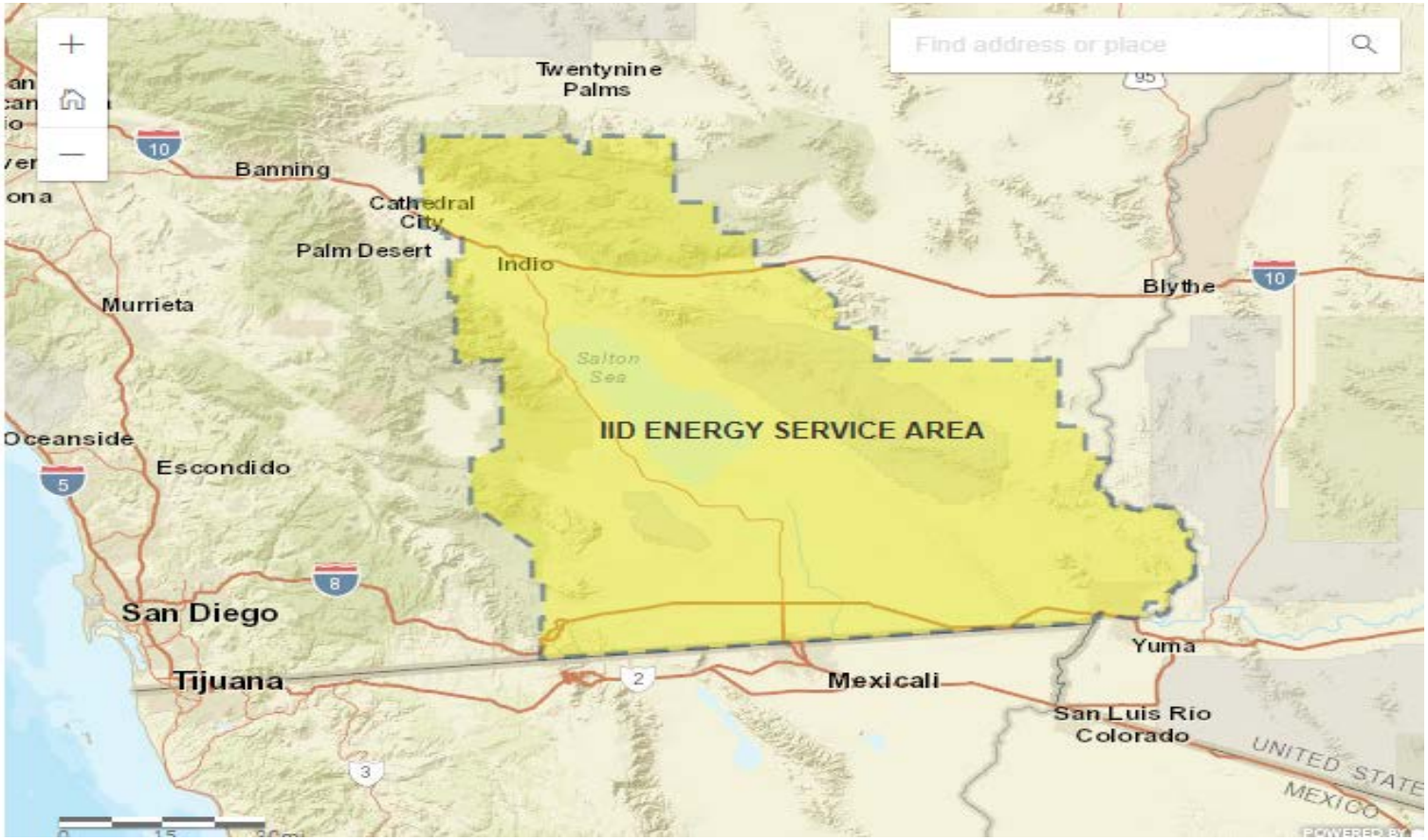
IID Energy Service

- Sixth largest utility in California; IID energy service area covers 6,471 square miles.
- Balancing Authority
- Adopted an Open Access Transmission Tariff in 2001 to facilitate generation interconnection
- Home to the Salton Sea Known Geothermal Resource Area
- IID currently has 1,100 MW of clean, renewable resources interconnected to its system consisting of small hydro, geothermal, biomass and solar.



IID
A century of service.

IID Energy Service Area



IID

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IID Electrical Service Area Demographics

- Median Poverty Level: 20.7%
- Unemployment: 20.7% as of September 2019
- Number of customers receiving rate assistance: 10,868 or approximately 15%
- Demographically diverse with majority minority population
- Many of IID's customers live under the federal poverty guidelines
- IID's public program eligibility criteria is set at 200% of the federal poverty guidelines to allow for greater enrollment as the need is so great
- IID's customer classes: Residential (86%), Commercial (13.5%) and Industrial (.5%)

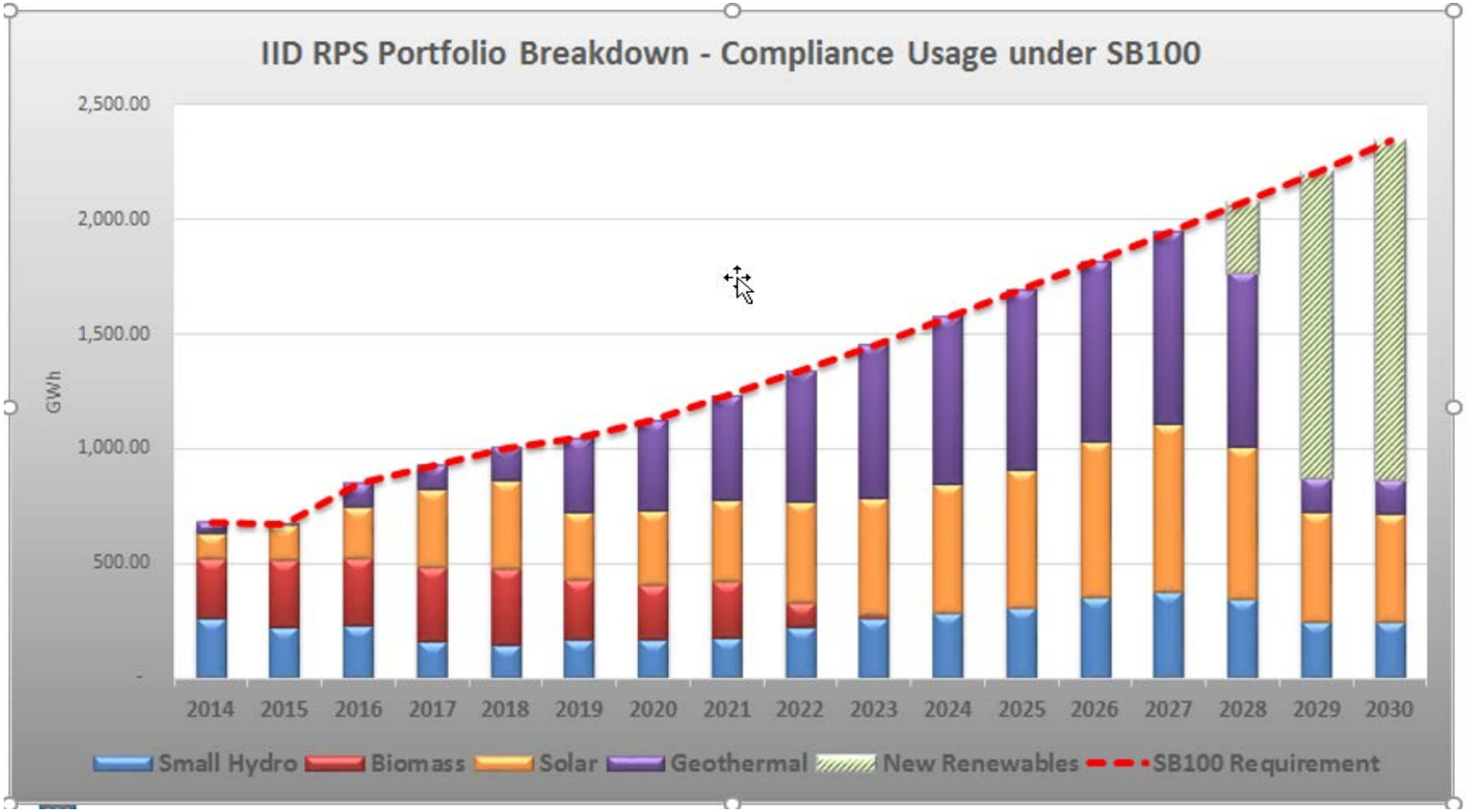
IID Generation Portfolio

- Biomass 46 MW
- Gas-fired generation 590 MW
- Geothermal 70 MW
- Hydroelectric (Large) 40 MW
- Hydroelectric (Small) 87 MW
- Nuclear 15 MW
- Solar 182 MW
  - *30 MW Community Solar to serve IID's low-income customers*
    - 30 MW included in 182 MW solar
  - *80 MW NEM/Net Billing Interconnections*
  - *12 MW additional for prisons in 2020*
    - Behind the meter projects not included in 182 MW solar

Battery Energy Storage System

- 30 MVA 20 megawatt-hour lithium-ion
- Enables additional intermittent resource interconnections by smoothing variable generation
- Increases system wide reliability
- Increases diversity in IID's energy portfolio
- Commissioned in October 2016

IID RPS Compliance



IID meets RPS Compliance and committed to meet RPS in 2028 and beyond.

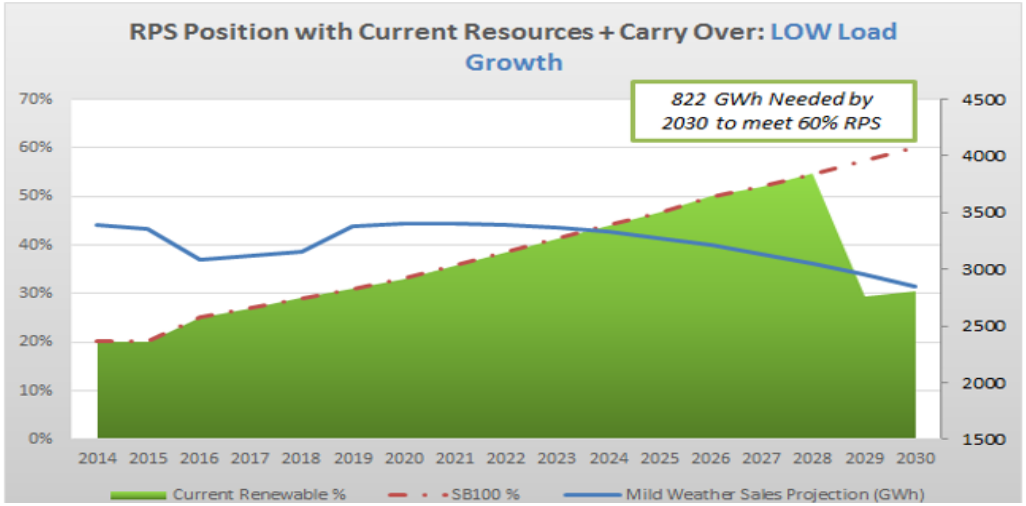
SB100 Challenges – Balancing Authority

- Balancing: Matching daily generation to load
  - *Summer Peak Load* *1067 MW*
  - *Winter Low Load:* *209 MW*
- Retirement of fast-ramping gas units
- System stability: More flexible resources needed to meet balancing authority area compliance requirements
- Current lack of cost-effective technological solutions to replace gas-fired generation is a challenge
- IID evaluating entering Energy Imbalance Market (EIM) to help mitigate impacts of over production

Anticipated Load Growth

- Challenges to accurate load forecast due to potential divestiture of the Coachella Valley area by 2033
- Coachella Valley represents 60% of IID's overall load
- The chart below includes the Coachella Valley.

RPS Position with Potential Load Reduction



SB100 Challenges – Cost

- Retirement of units before end of useful life requires covering of existing debt service obligations (stranded cost) – [IID's last unit was commissioned and achieved commercial operation in 2012]
- Replacement of existing units with more reactive and flexible resources will result in additional cost
- Capital costs will increase with installation of more storage and additional transmission facilities needed to maintain system reliability
- During the transition to 100% all costs will be pushed back to IID ratepayers, causing increased rates; IID's low income customers will suffer greatest negative impact
- During transition to 100% retirement of fast ramping units will drive increased costs for balancing and ancillary services

SB100 Challenges – Long-Term

- Additional costs burden of new resources and transmission will be borne by IID ratepayers
- Time required to build new resources and transmission is a factor.
- Additional costs drive the need for rate increases on customer base least able to bear the burden
- Potential divestiture of the Coachella Valley portion of the IID system (approximately 60% of load) by 2033 makes for even greater uncertainties around future capital investment and resource procurement

Wrap-Up

- IID voluntarily adopted to comply with RPS long before POUs were required
- IID values renewable resources and supports the development of additional resources in Imperial and Coachella Valleys to help achieve SB 100 goals
- There are grid-related challenges and costs associated with interconnection of additional resources
- More behind the meter and micro-grid projects will drive need for more flexible/load following resources and transmission
- Maintaining low residential rates will be a challenge
- Low-income customers will be the most financially impacted
- Uncertainty regarding the district's Coachella Valley customers presents greater challenges for IID in terms of capital investment and additional resource procurement