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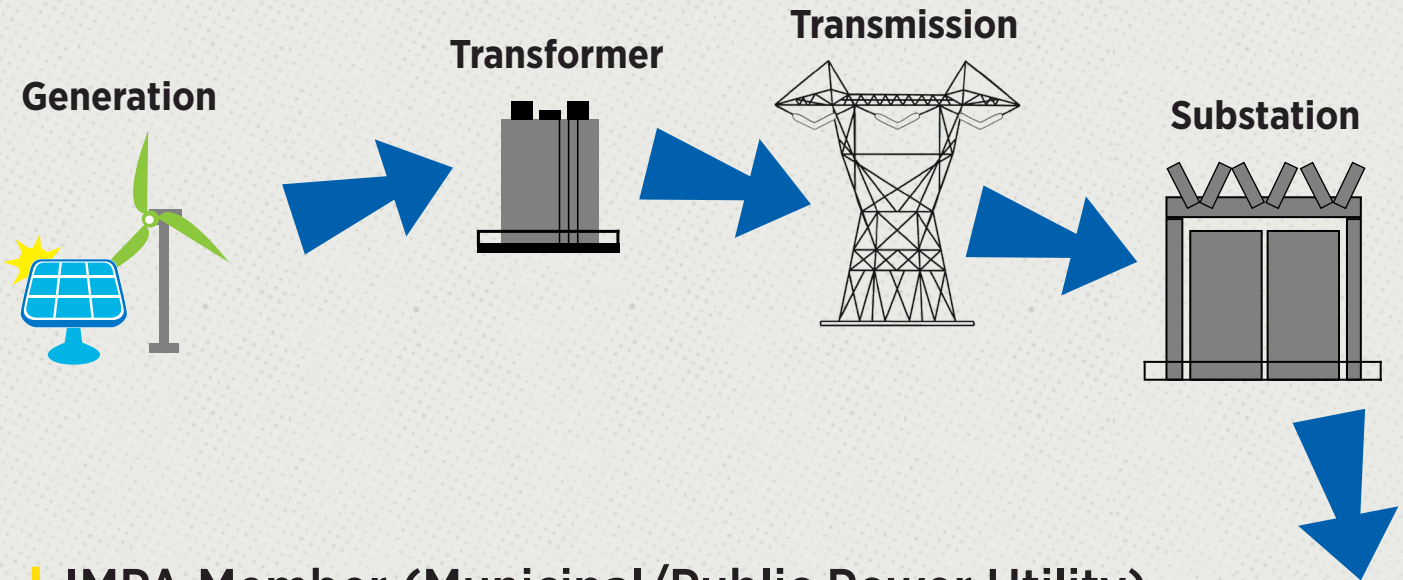


**INTEGRATED RESOURCE PLAN
2024 - 2043**

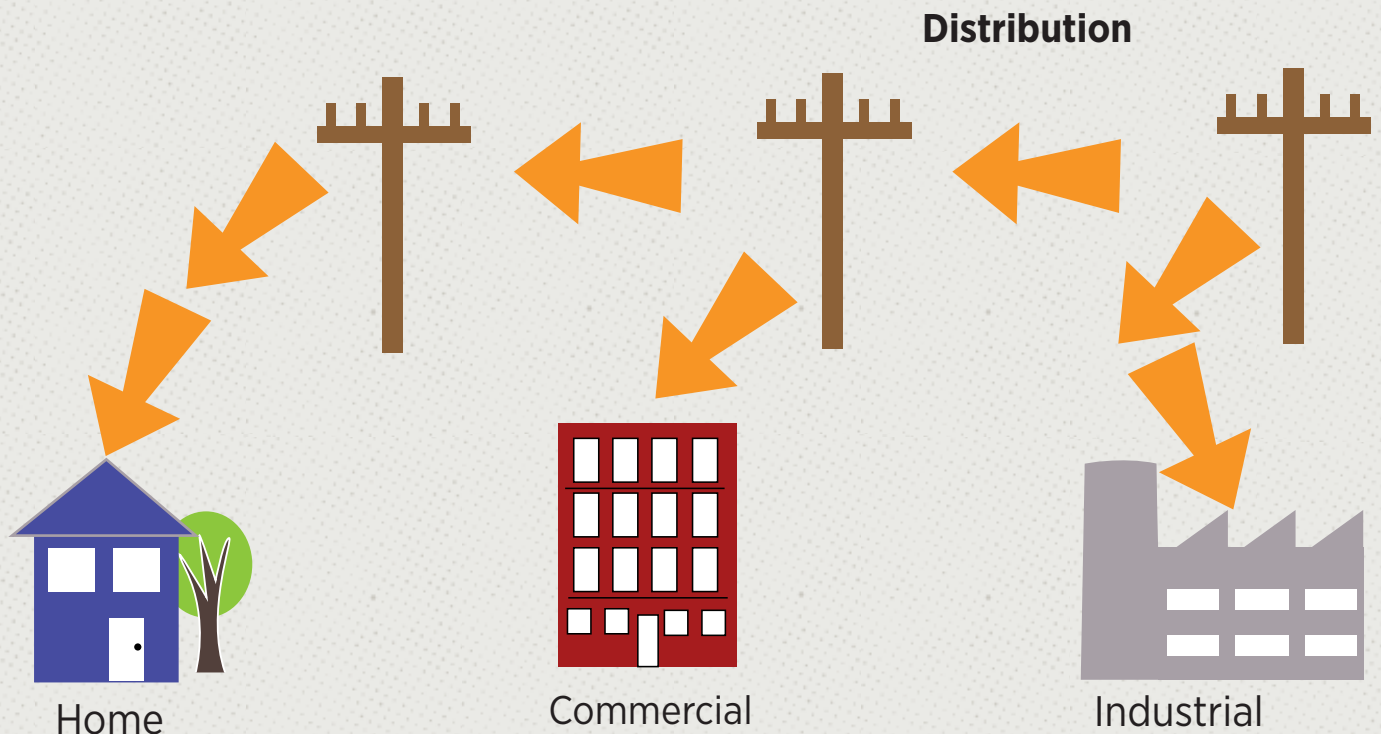
FEBRUARY 2024

How does electricity flow from IMPA to its member utilities?

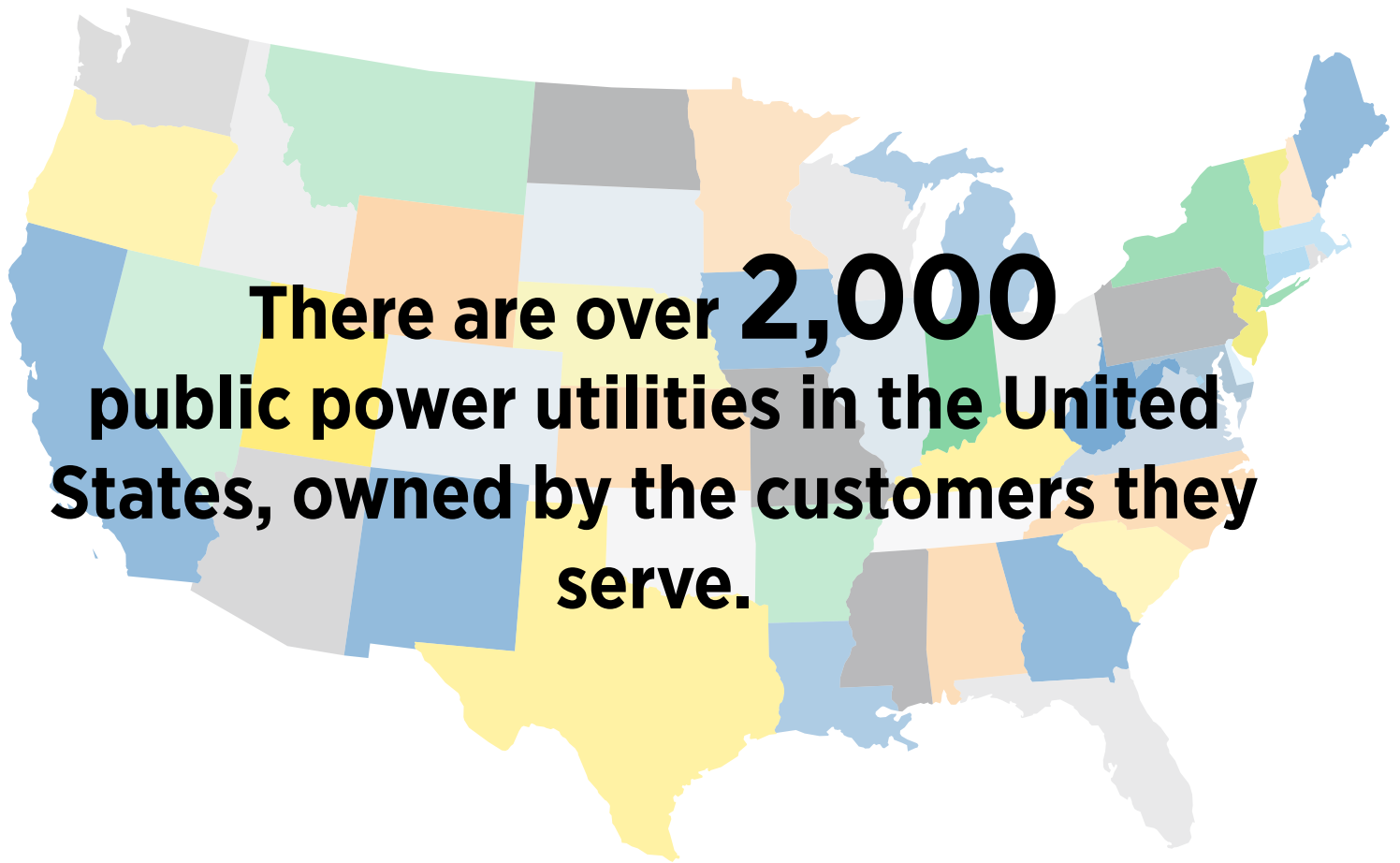
IMPA provides generation and transmission



IMPA Member (Municipal/Public Power Utility) provides distribution



Public Power



**47
Million**

customers served
throughout the U.S.

**Local &
Reliable**

service provided
by friends & neighbors

**Not for
Profit**

entities that exist
to serve customers

IMPA by the Numbers

40

years of operations

61

communities served

350,000

customers

**\$530
million**

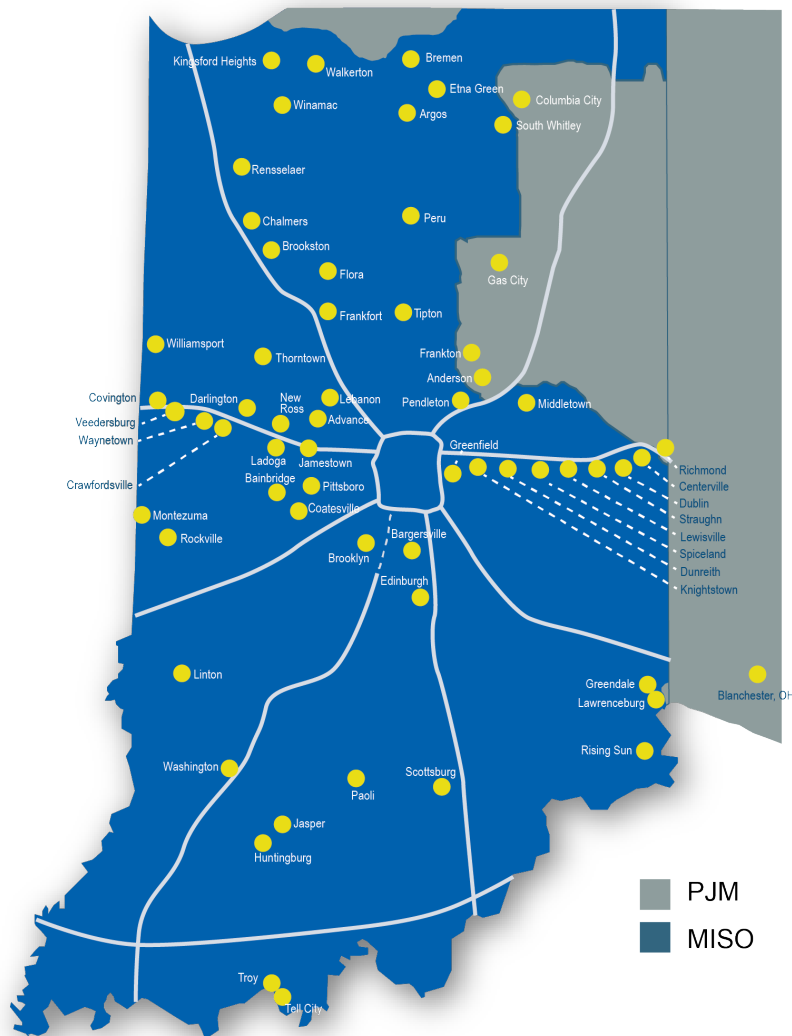
in annual revenues

**~\$2.0
billion**

in total assets

A1/A+

strong bond ratings



Low-cost,
Reliable,
Environmentally
Responsible
Wholesale
Power
Provider

What is Resource Planning?

IMPA creates scenarios as a structured way to think about the future, as scenario planning is a proven tool to better anticipate and respond to future risks and opportunities. IMPA develops stories about how the future might unfold by building alternate views of the future given different political, economic, regulatory, or technological assumptions. For the 2023 IRP, IMPA developed three scenarios for testing prospective portfolio decisions.

Base Case

A world grounded in data that IMPA believes at this time to be the most accurate portrayal of future trends.

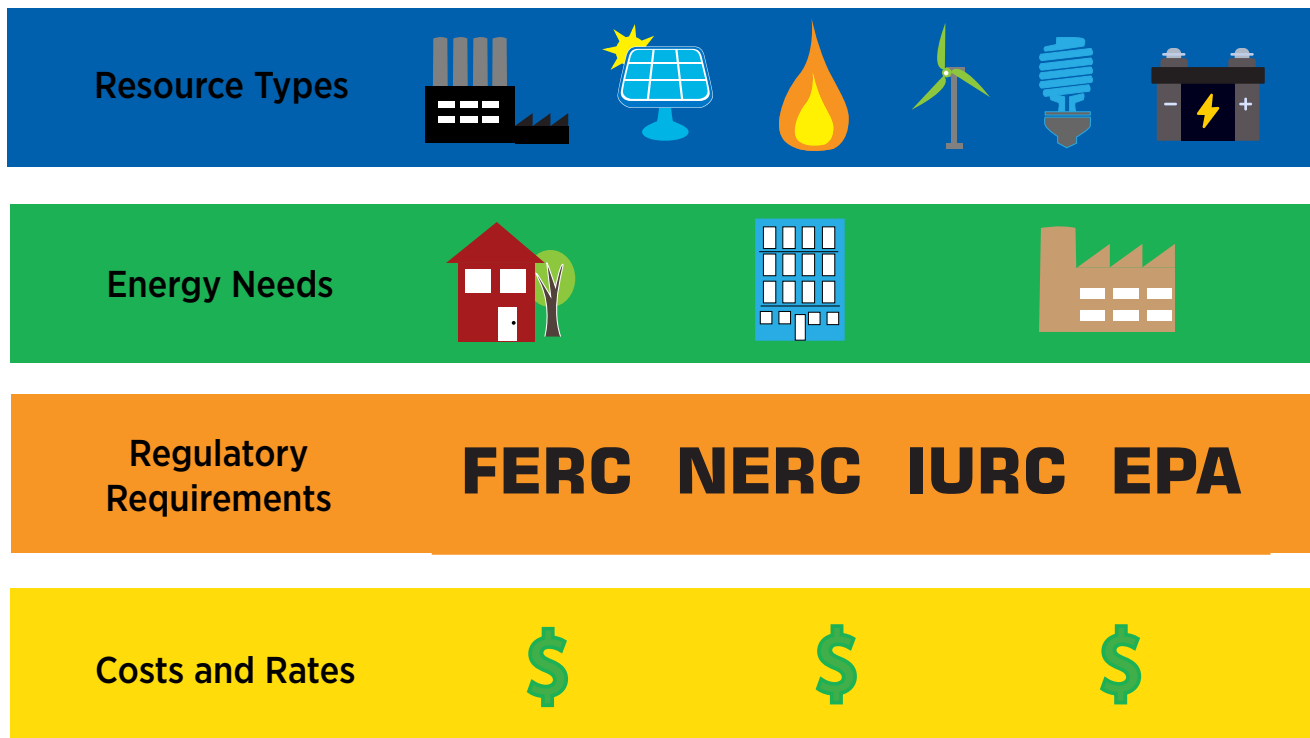
Austerity Case

An economically pessimistic version of the base case with lower consumption and non-carbon tax incentives repealed.

Voluntary CO2 Reduction Case

A “Green New Deal” type of world in which IMPA, presumably alongside the market as a whole, aims to reach net-zero carbon emissions by 2040.

Resource Planning Process



Resource Options



Baseload - Nuclear

- Long lead time to develop
- Capital cost: \$9,000-\$10,000/kW
- Operating Costs (production and fuel) are relatively low and stable



Intermediate - Natural Gas Combined Cycle

- Mid-range development time
- Capital cost: \$1,200-\$1,300/kW
- Cost dependent on natural gas, currently low-cost



Peaking - Natural Gas Combustion Turbine

- Development times are short
- Capital cost: \$800-\$1,000/kW
- Operating costs are high
- Used during peak energy use times



Intermittent - Wind

- Development times are short
- Capital cost: \$1,200-\$1,300/kW without subsidy
- Operating costs are low
- Dependent on wind conditions for energy output
- Unpredictable generation output



Intermittent - Solar

- Development time is short
- Capital cost: \$1,200-\$1,500/kW DC without subsidy
- Operating costs are low and stable
- On-peak energy
- Dependent on local solar conditions for energy output
- Low winter capacity ratings



Storage - Battery Energy Storage System (BESS)

- Newer technology
- Long discharge, industrial-sized batteries not yet available
- Capital cost \$1,300-\$1,400/kW
- Pairs well with high levels of intermittent generation



Energy Efficiency - Reduced Consumption

- Investment is initial rebate/incentive to participants
- Achieves energy savings and reduces peak load
- Effectiveness depends on customer participation
- Demand Response

IMPA's Integrated Resource Plan

Key Findings

Due to the upcoming retirement of Gibson 5, IMPA faces a capacity shortfall towards the end of the decade. Current modeling suggests that a new, dual fuel combustion turbine would be a suitable replacement for the lost capacity due to Gibson 5's retirement. IMPA plans to execute a 200 MW bilateral capacity contract to fulfill capacity needs in the meantime.

IMPA's Action Plan

Work with the Gibson 5 partners regarding the final plan, timing, and cost for retirement of the unit.

Execute short-term bilateral capacity contract and begin internal planning for the best path forward for adding CT capacity to its portfolio as a replacement for Gibson 5.

Monitor with the renewable energy market to evaluate potential utility scale projects that may benefit the power supply portfolio.

Continue the IMPA Energy Efficiency Program and implement revised demand response program.

Monitor the RTO/ISO market rules regarding renewable capacity accreditation and resource adequacy.

Monitor elections and the legislative process to remain informed on future environmental policy as it pertains to CO2.



IMPA

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40