

# Navigating “Grid Mod” Investments: Tools in the Toolbox

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Regulatory Reform

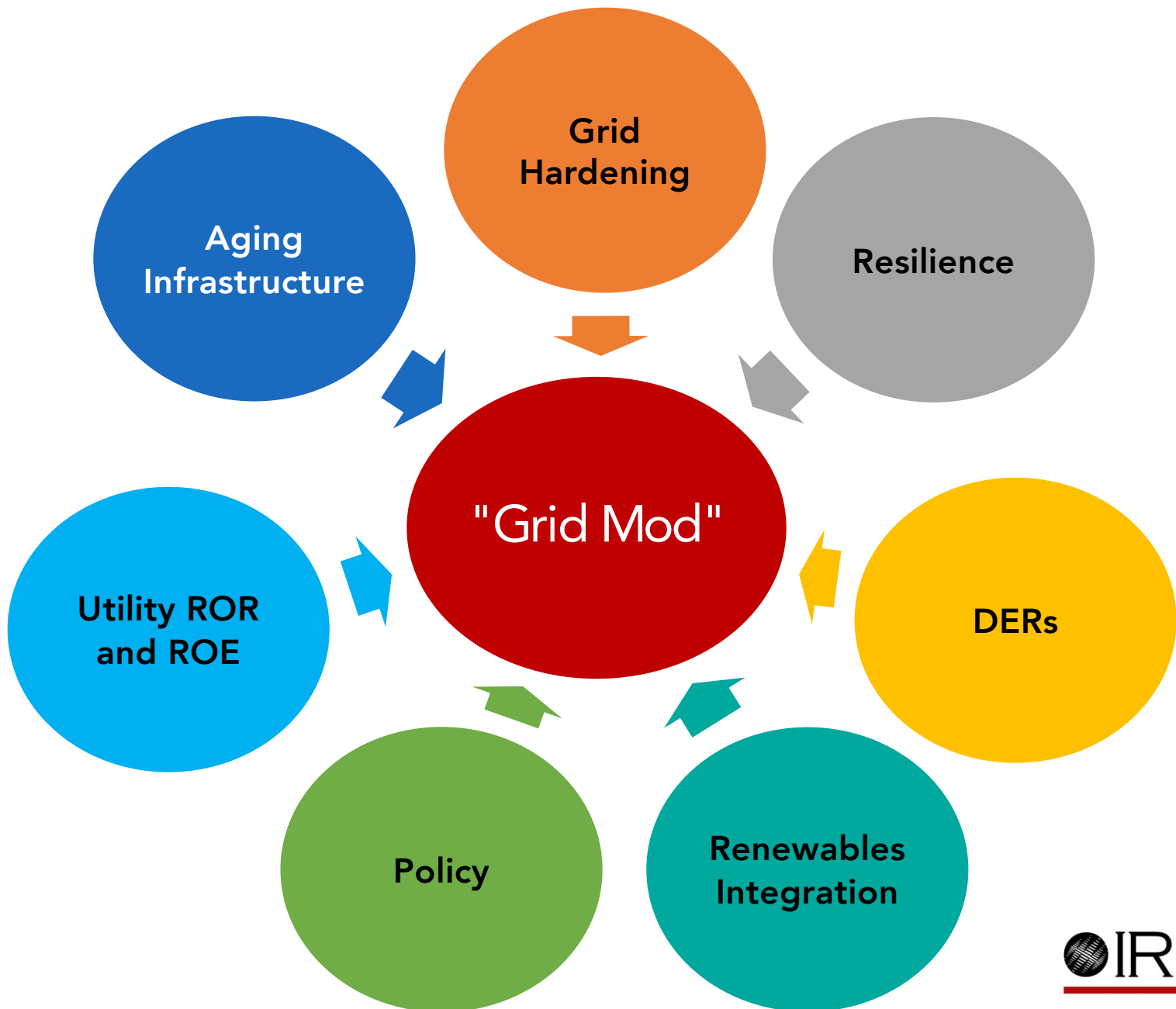


Quality Workforce



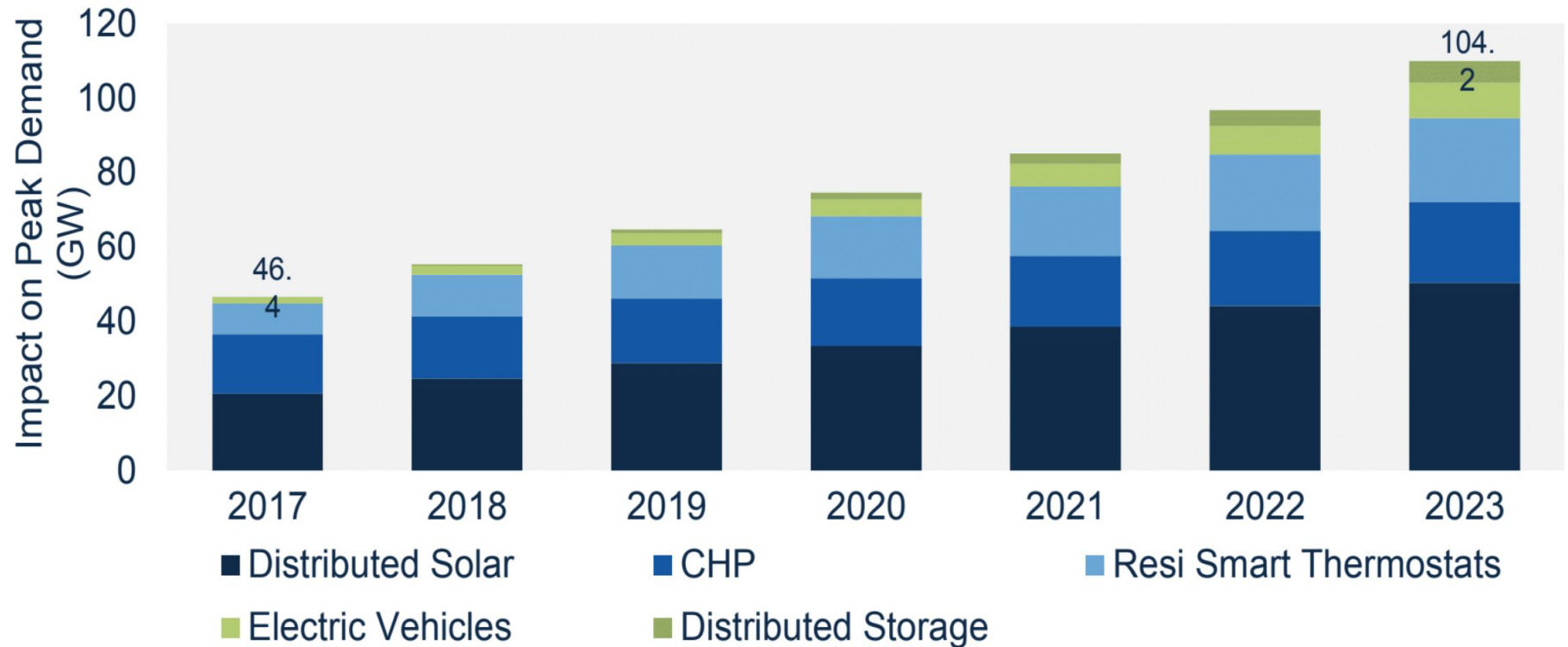
Consumer Empowerment

*Independent, national non-profit / Est. 1982*



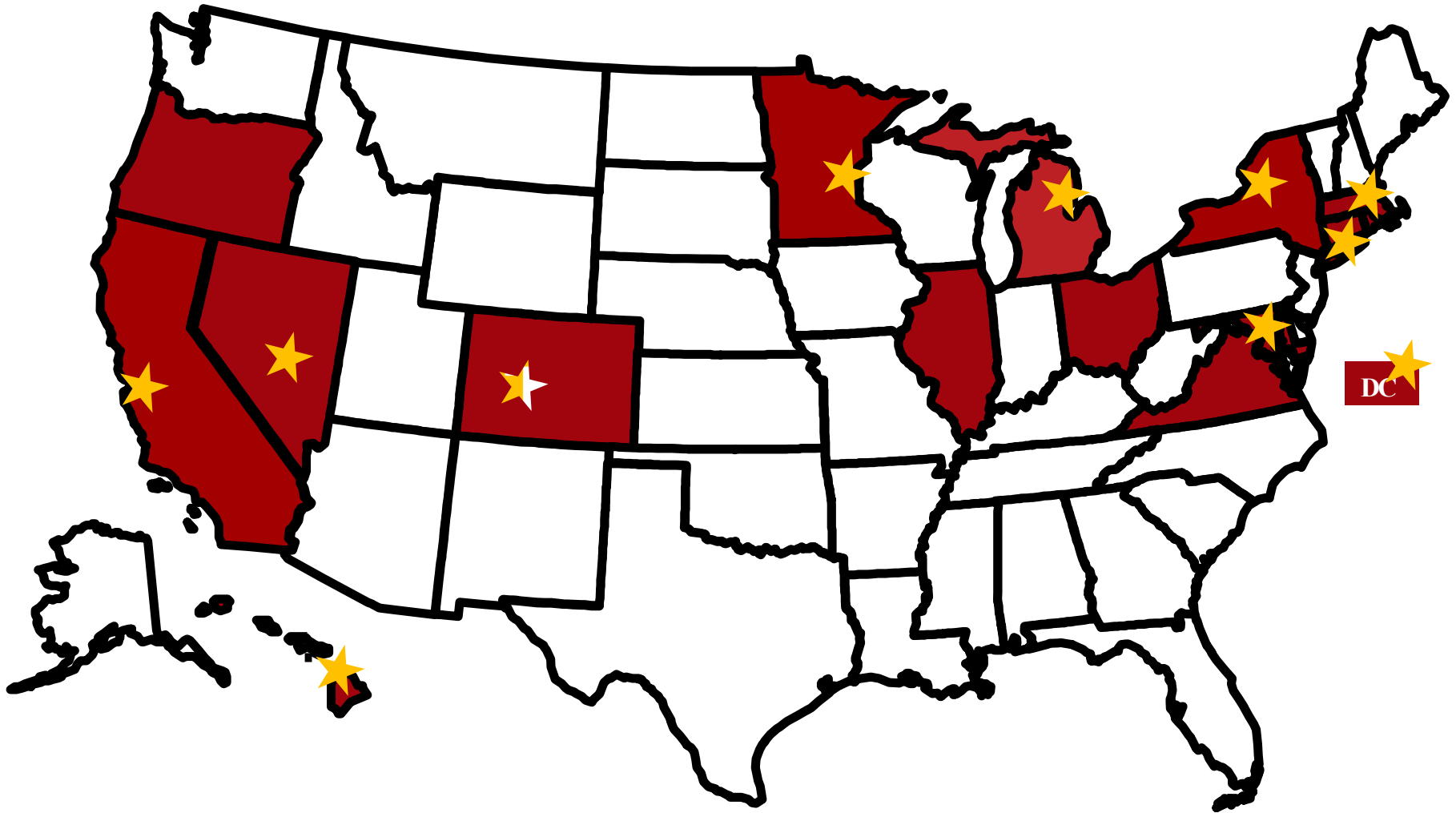
# DERs Expected to More than Double by 2023

US DER and Connected Device Impact on Peak Potential, 2017-2023



Source: GTM Research and Department of Energy

# State-led "Grid Modernization" Activity



★ Distribution Resource Planning efforts underway

# State-led “Grid Modernization” Activity

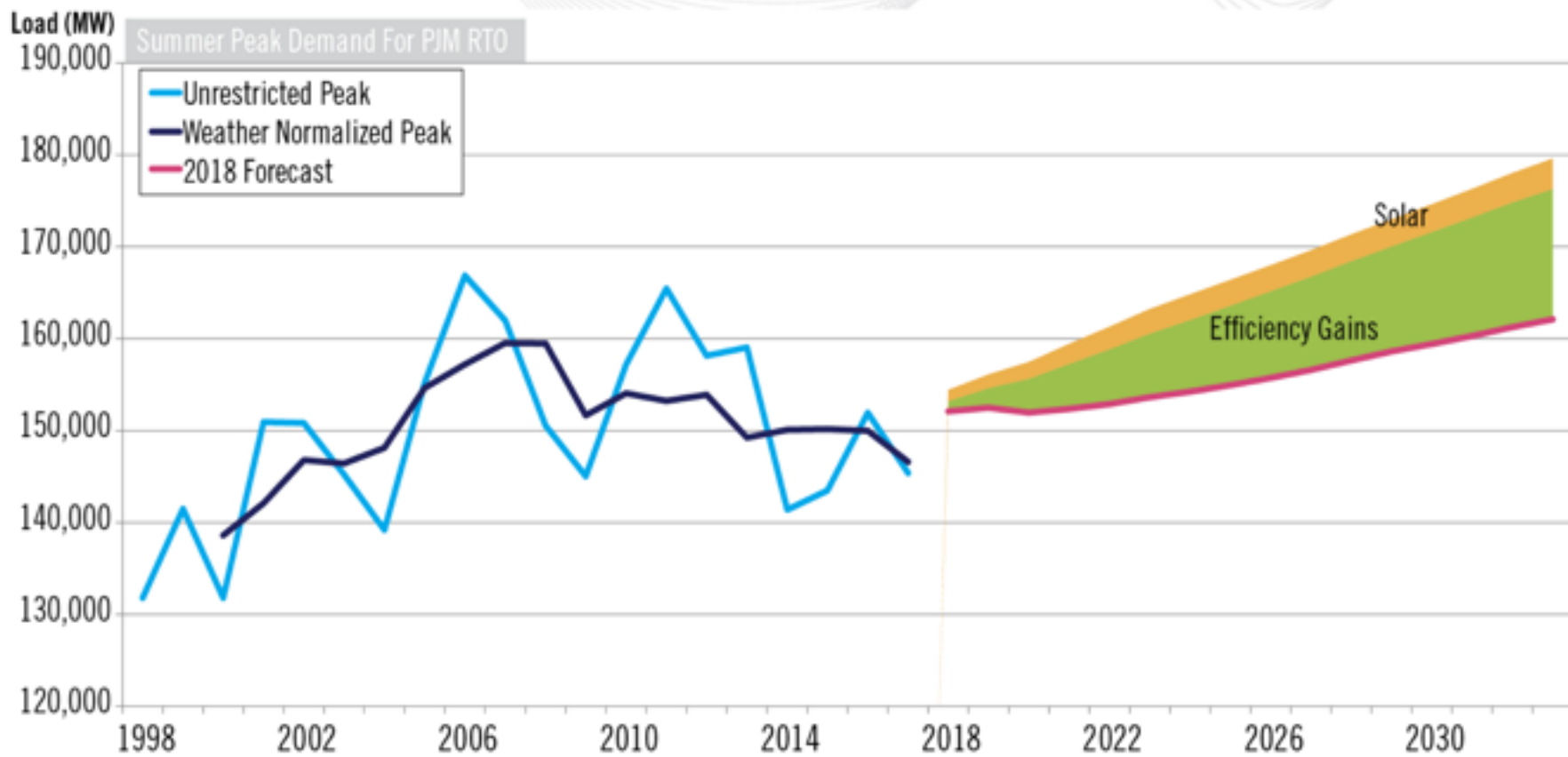
## Q1 2018:

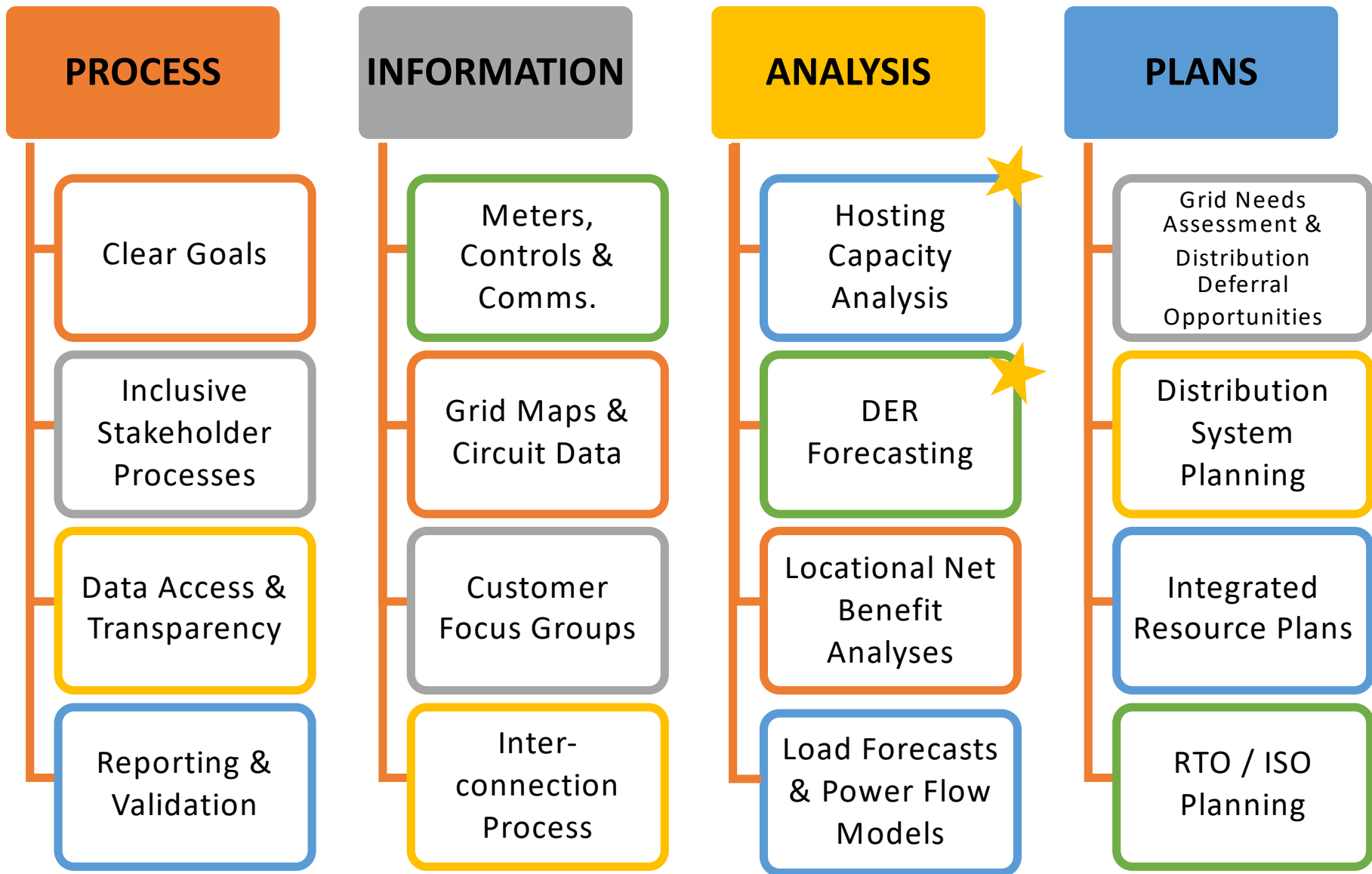
- ❖ **37 states (+ D.C.) = 259** policy/regulatory actions on grid modernization, utility business model and rate reform, energy storage, microgrids, and demand response.
- ❖ **42 states (+ D.C.) = 275** policy/regulatory actions on EVs and charging infrastructure

*(Source: North Carolina Clean Energy Technology Center, 50 States of Electric Vehicles Q1 2018 Report & 50 States of Grid Modernization Q1 2018)*



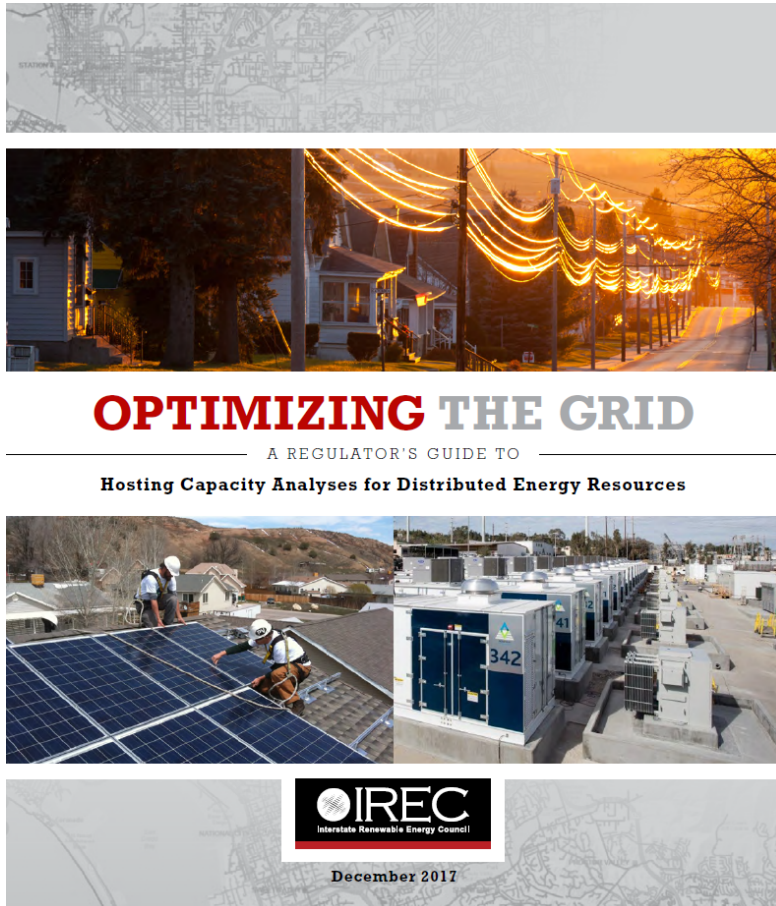
## Efficiency and Solar Impacts







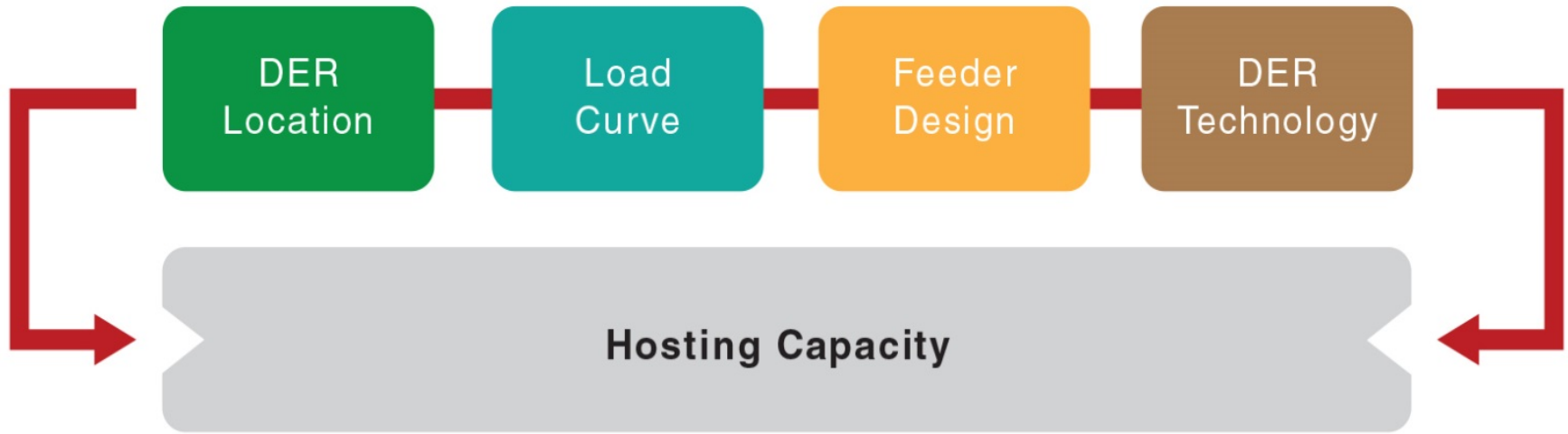
# IREC Report on Hosting Capacity Analysis...



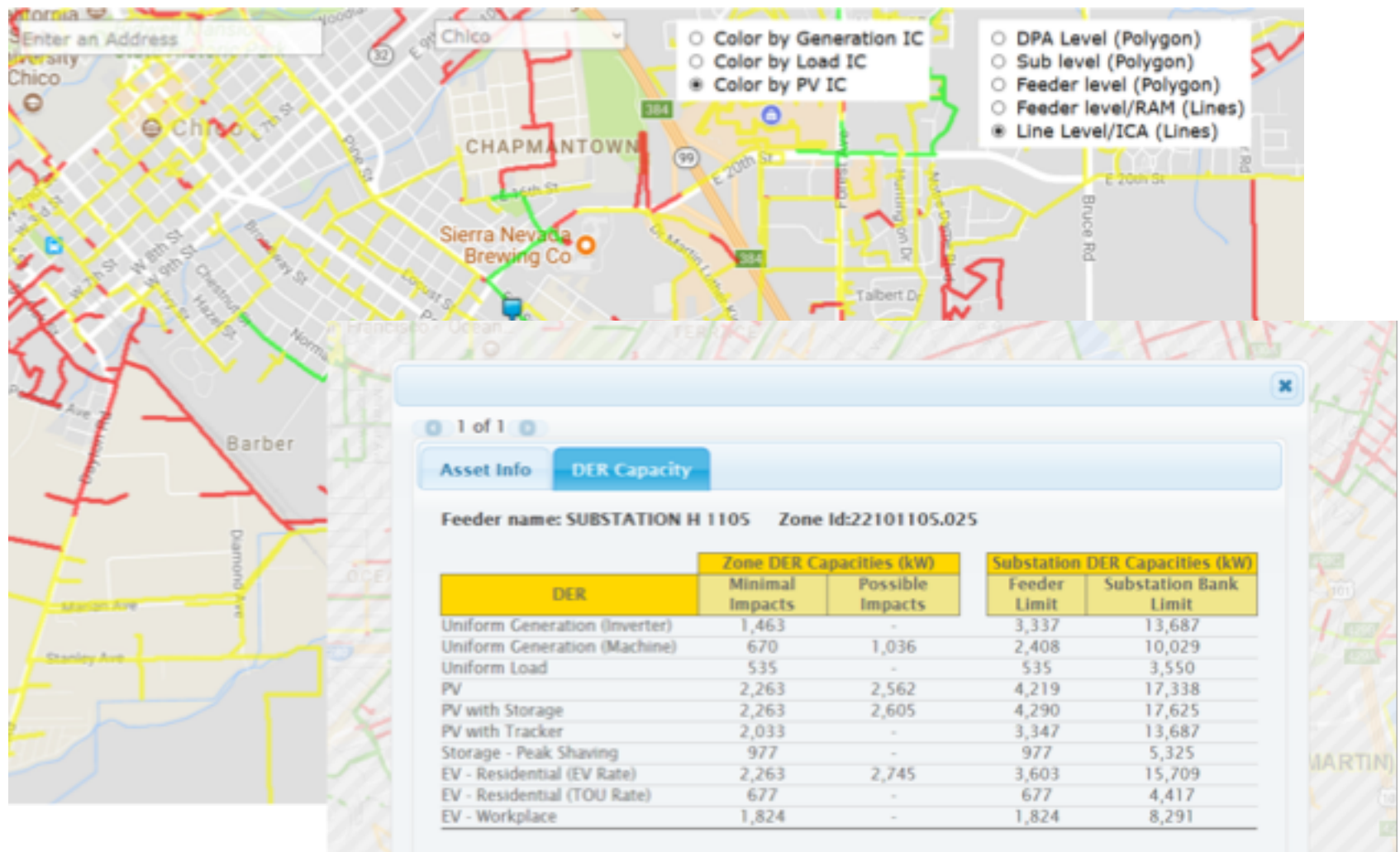
- Regulatory process steps
- Stakeholder engagement
- Use cases
- HCA methodologies
- Implementation criteria
- Validation of results
- Data sharing
- Case studies: CA, MN, NY, Pepco

...free downloads at [www.irecusa.org/publications](http://www.irecusa.org/publications)

# Hosting Capacity Components



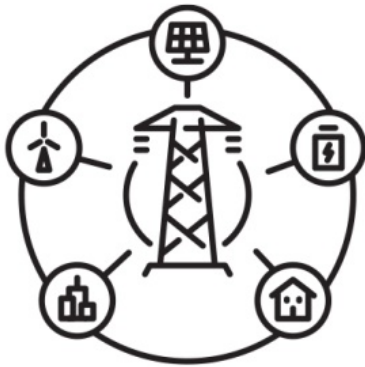
# Hosting Capacity Maps & Circuit Data



From PG&E Demonstration A ICA Map, available at:

<https://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/PVRFO/DemoAMap/DemoA.html>

# HCA Use Cases



Interconnection of DERs



Distribution Planning

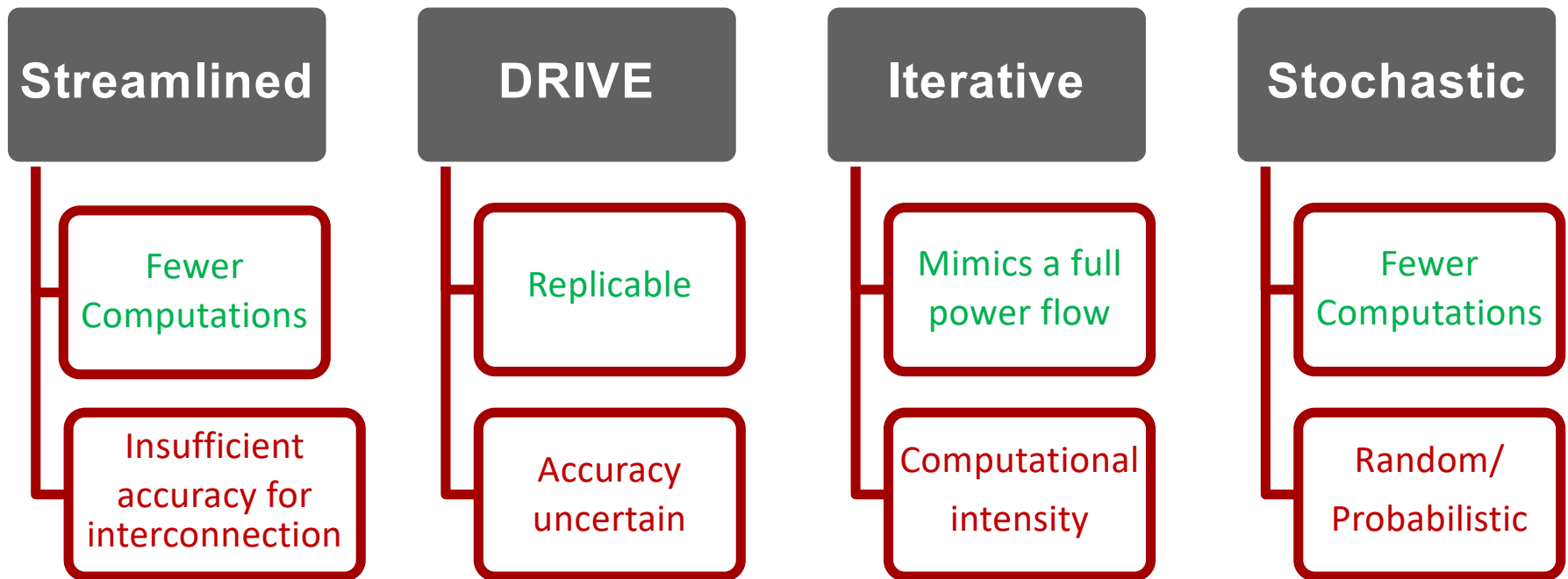


Locational Value of DERs

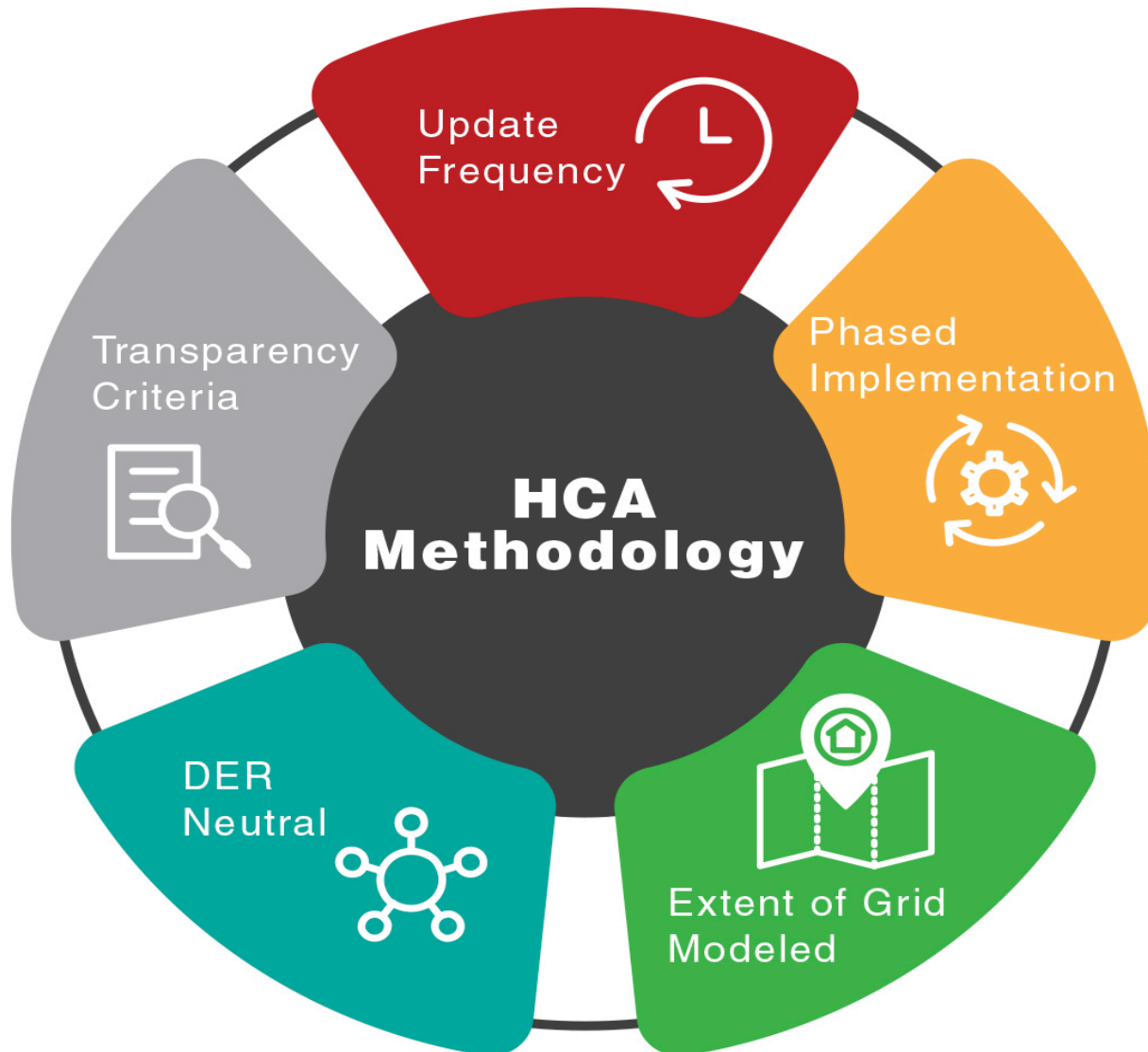
Hosting Capacity Use Cases

**Free Downloads of *Optimizing the Grid*: [www.irecusa.org/publications](http://www.irecusa.org/publications)**

# HCA Methodologies



# Criteria to Guide Methodology



# DER Forecasts



## Informed Grid Planning

- **When** will DER growth occur over time?
- **Where** on the grid will that growth occur?
- **How** will these new DERs operate?



## Approaches

- “Top-down”
- “Bottom up”

*Publish...  
Compare...  
Refine*



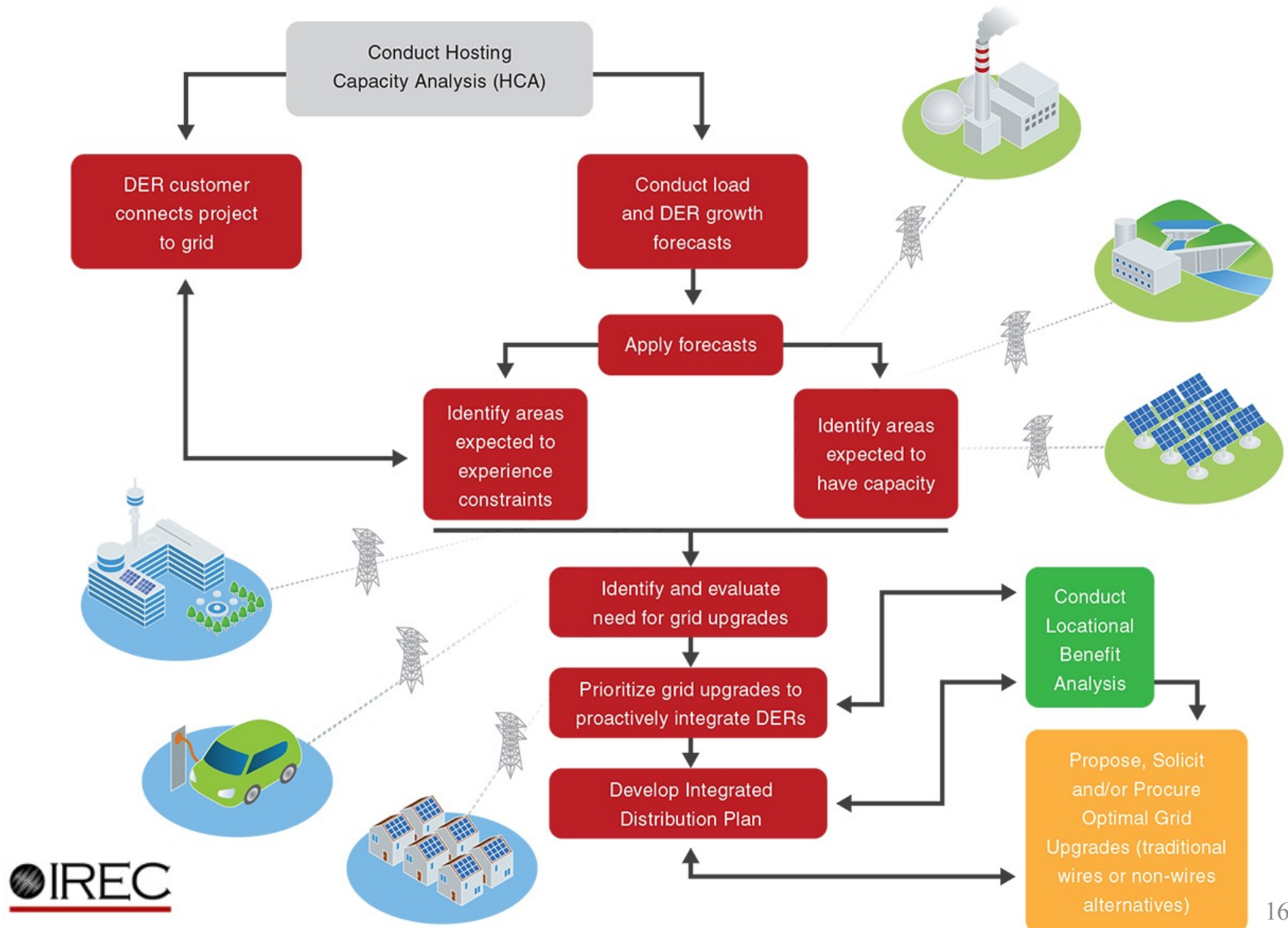
## Reliable Data

- Zoning and planning
- DMV
- Interconnection & Permitting

For more, see IREC Insight Series Blog on DER Forecasting: [www.irecusa.org](https://irecusa.org/2018/02/cornerstone-for-next-generation-grid-activities-forecasting-der-growth/)  
<https://irecusa.org/2018/02/cornerstone-for-next-generation-grid-activities-forecasting-der-growth/>



# Integrated Distribution Planning





# Navigating the future...



Credit: Skift Take, <https://skift.com/2017/08/29/houston-hotels-bear-brunt-of-hurricane-harvey-and-already-weak-oil-markets/>

# Thank you! Questions?

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