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ASSISTANCE PROJECT

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Designing a 24/7 Carbon-Free Electricity Transition Tariff

ESIG Load Forecasting Workshop – Rate Design Panel

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Technical
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Appendices):



The United Nations' 24/7 Global Compact Has Attracted 148 Entities ...



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Join the Movement for a 24/7 Carbon-Free Energy Future

The science is clear: the urgency of the climate crisis demands bolder, faster and more tangible action. To combat this, we must ensure electricity demand across all sectors and industries is met with carbon-free energy sources, every hour, every day, everywhere.



See: <https://gocarbonfree247.com/>

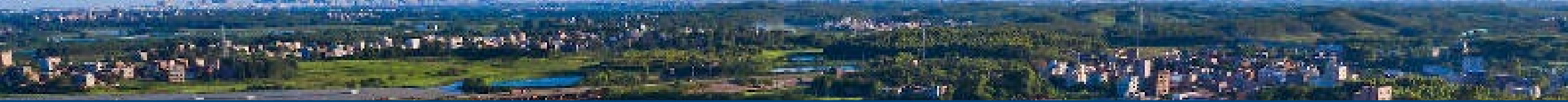
... Including the US Federal Government, Which Joined in December of 2023

United States Government Joins UN 24/7 Carbon-Free Energy Compact

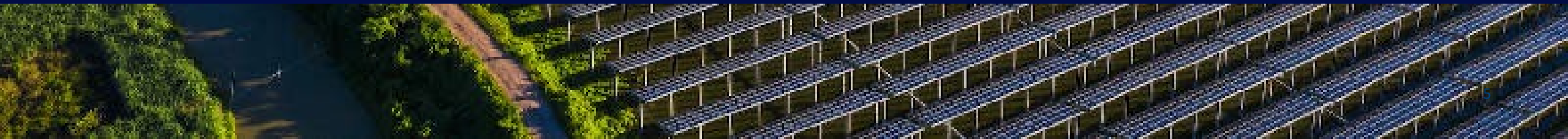
Dubai, UAE | 5 Dec 2023: At the United Nations Climate Change Conference of the Parties (COP28), the White House Council on Environmental Quality (CEQ) announced that the United States Government has joined the United Nations (UN) 24/7 Carbon-Free Energy (CFE) Compact. The 24/7 CFE Compact, which UN-Energy and Sustainable Energy for All launched in 2021, is a voluntary commitment with over 140 participants that aims to match every hour of electricity consumption, on every energy grid globally, with carbon-free sources of electricity production.

[Read more about the announcement](#)





How Does 24/7 Differ From Annual Matching Tariffs?





Annual matching

Existing annual matching green tariffs leave many hours served by fossil-fueled resources...



Annual investments

...without any incentive to procure resources that address the fossil-fueled hours.



Hourly matching

24/7 transition tariffs incentivize ...



Hourly investments

...that address high-emitting places and hours and the need for carbon-free firming resources.

Why Are Customers and Utilities Interested in 24/7?

Customers

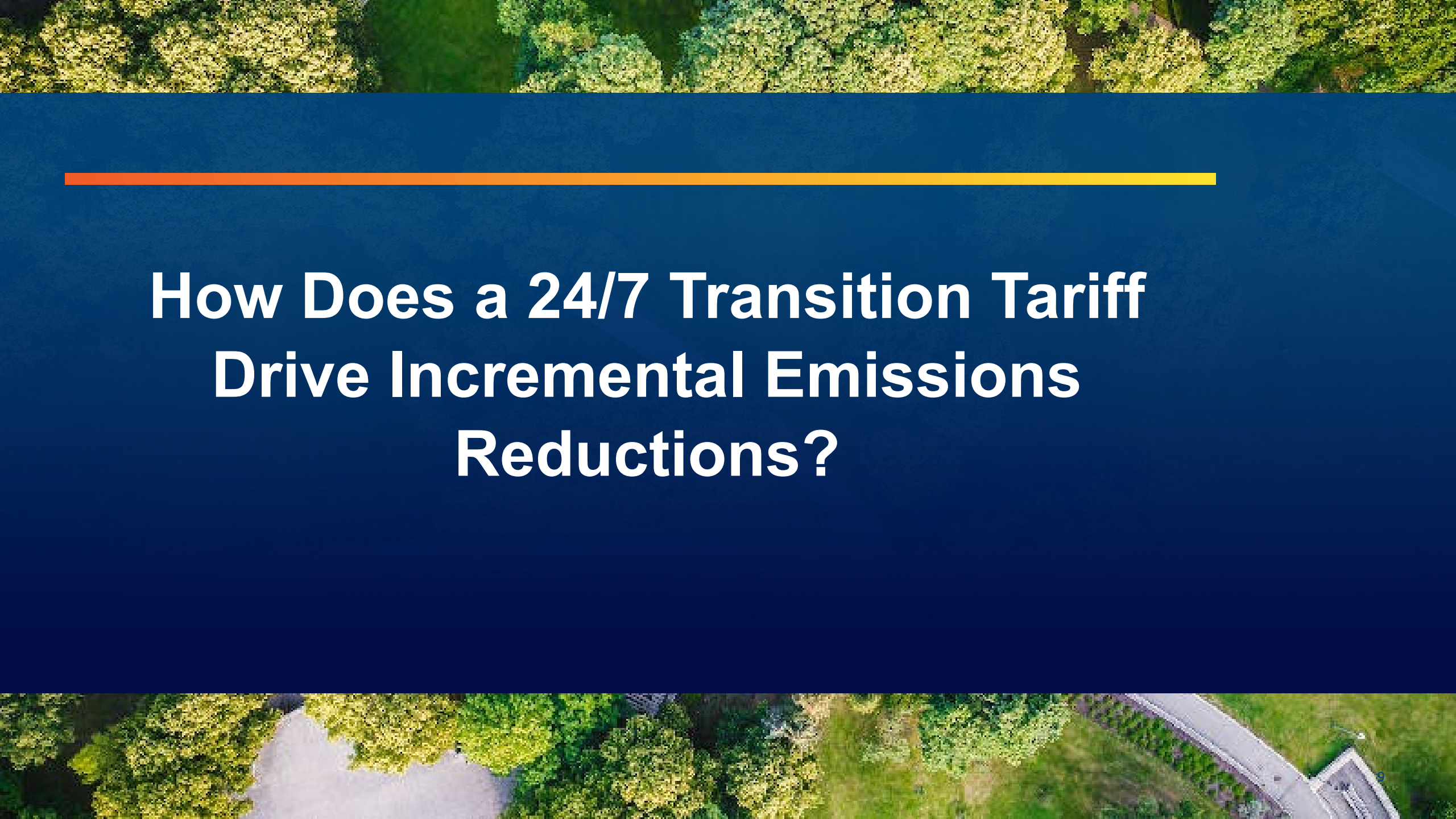
- Provides hourly decarbonization assurance
- Engages local resources (e.g., aggregated DERs)
- Builds local jobs
- Accelerates new technology
- Supports local resilience
- Demonstrates leadership

Utilities

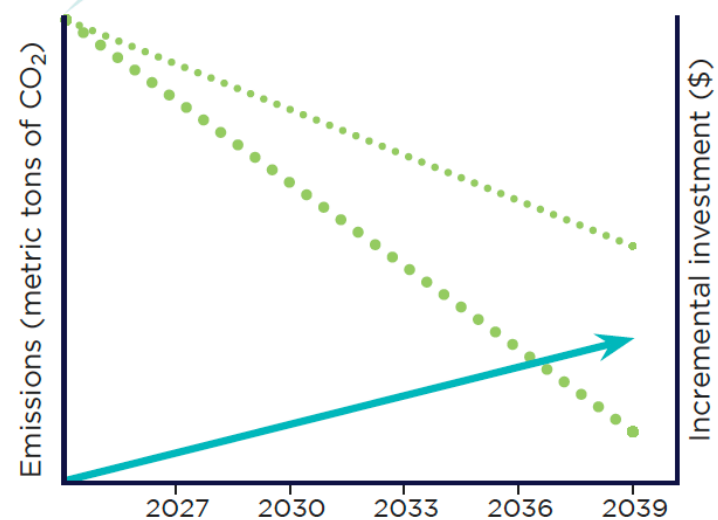
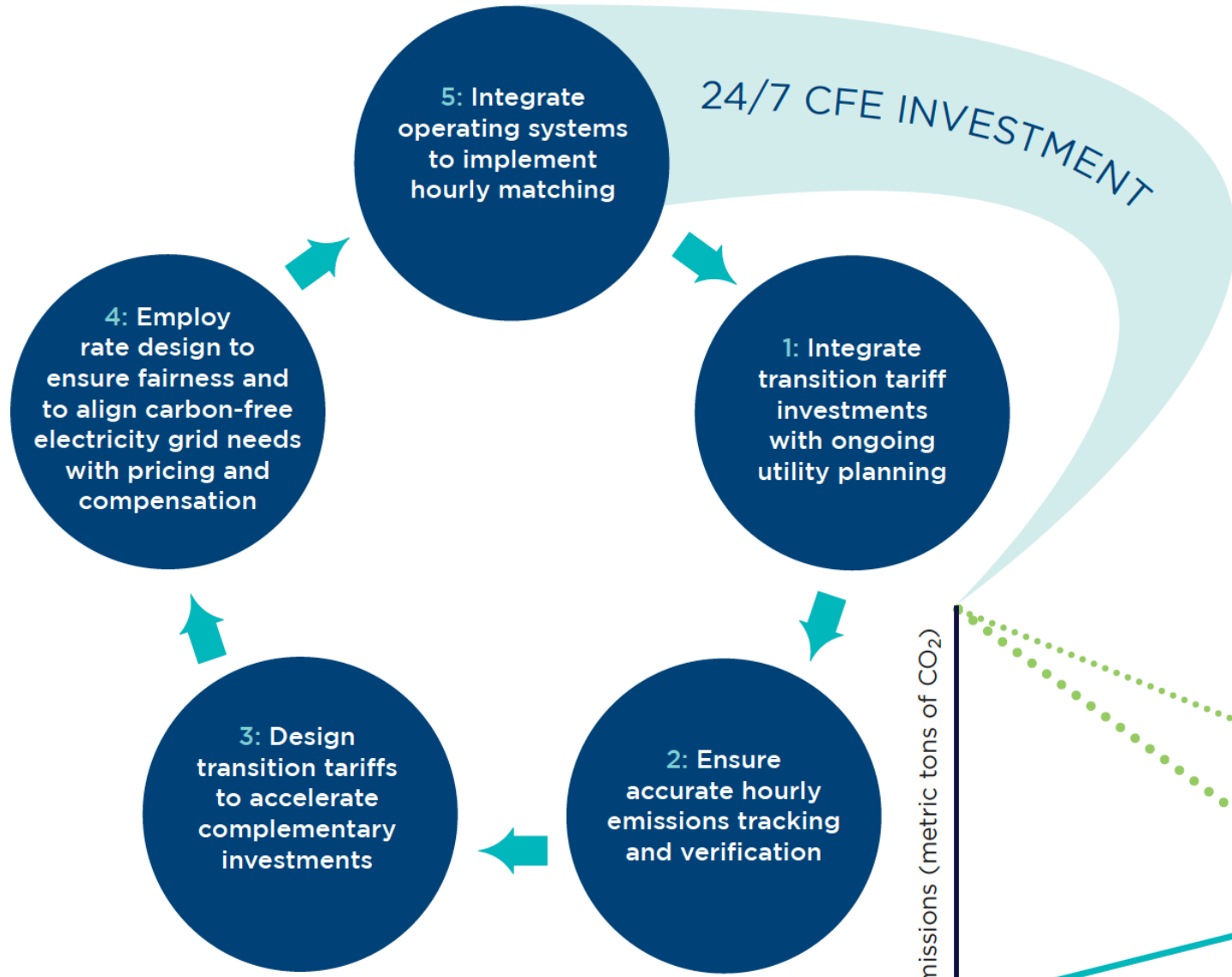
- Existing customers are asking (e.g., federal facilities)
- New customers are asking (e.g., data centers)
- Clarifies capital investment priorities vis-à-vis non-utility investments
- Supports decarbonization public policies

Five Fundamentals Drive an Effective Tariff and Equitable Rate Design

1. Integrate transition tariff investments with ongoing utility planning.
2. Ensure accurate hourly emissions tracking and verification.
3. Design transition tariffs to accelerate complementary investments.
4. Employ rate design to ensure fairness and to align carbon-free electricity grid needs with pricing and compensation.
5. Integrate operating systems to implement hourly matching.

An aerial photograph of a dense green forest. A path leads from the top right towards a waterfall on the left side of the image. The waterfall is surrounded by rocks and lush vegetation. The overall scene is vibrant and natural.

How Does a 24/7 Transition Tariff Drive Incremental Emissions Reductions?



- Investment growth
- ⋯ Business as usual
- ⋯ 24/7 principles are used

(illustrative)



Employ Rate Design to Ensure Fairness and to Align Carbon-Free Electricity Grid Needs With Pricing and Compensation

Ratemaking for 24/7 Transition Tariffs Happens in a Policy Context



Provision of safe, reliable and resilient service



Societal equity



Administrative feasibility



Innovation and competition



Public health and environmental goals

Ratemaking Goals for 24/7 Are Familiar

- Effectiveness in yielding total revenue requirements
- Customer understanding and acceptance
- Equitable allocation of costs and the avoidance of undue discrimination
- Efficient price signals that encourage optimal customer behavior

Ratemaking Points of Emphasis in Establishing a Transition Tariff

- Establish the rate structure
- Define eligible load
- Establish incremental costs from the 24/7 program
- Establish incremental benefits of the 24/7 program resources
- Establish the duration of the tariff arrangement

Recommendations Supporting a 24/7 Transition Tariff that Benefits All

- **Recommendation 1:** Determine net costs using integrated planning.
- **Recommendation 2:** Allocate net costs of CFE to participating customers.
- **Recommendation 3:** Design incentives to manage the demand side.
- **Recommendation 4:** Plan to co-optimize customer and utility investments.