



# Acadia Center

**Advancing the Clean Energy Future**

# **Energy Efficiency and the Consumer-Focused Power Grid: A Spotlight on Rhode Island**

**Presented at the ACEEE National Conference on  
Energy Efficiency as a Resource**

September 21, 2015

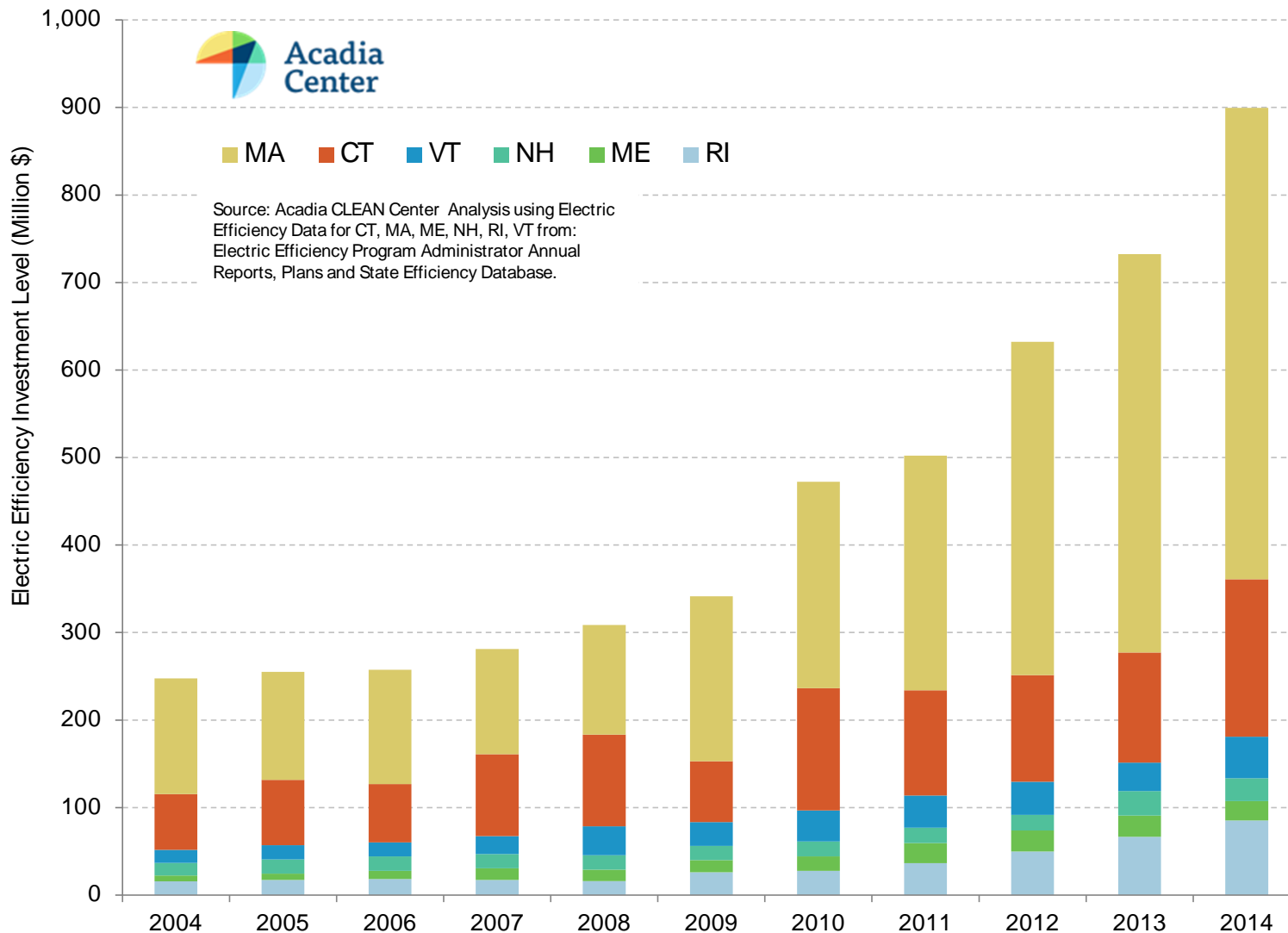
Little Rock, AR

Bill Dornbos

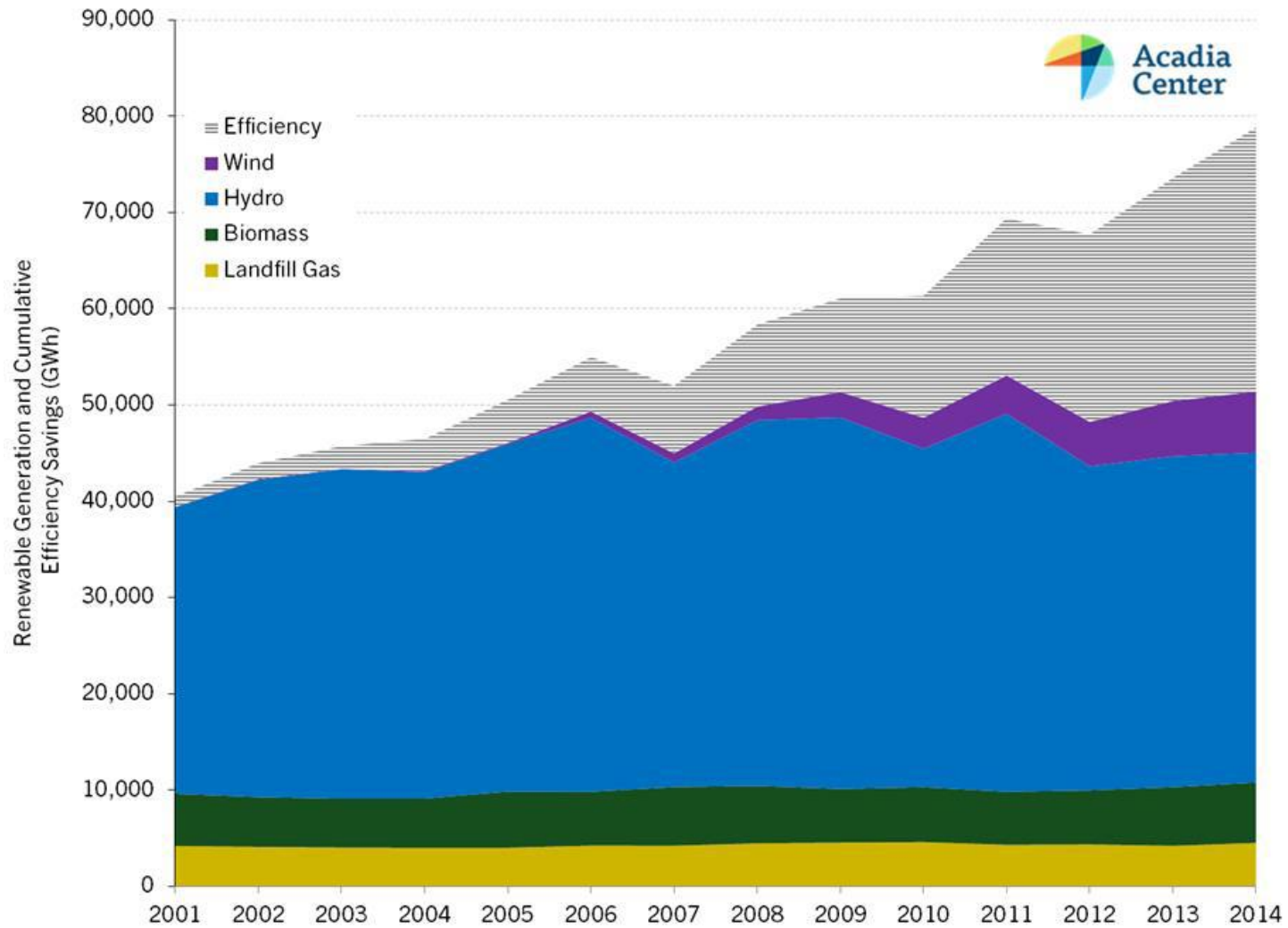
Senior Attorney & Connecticut Director

Acadia Center

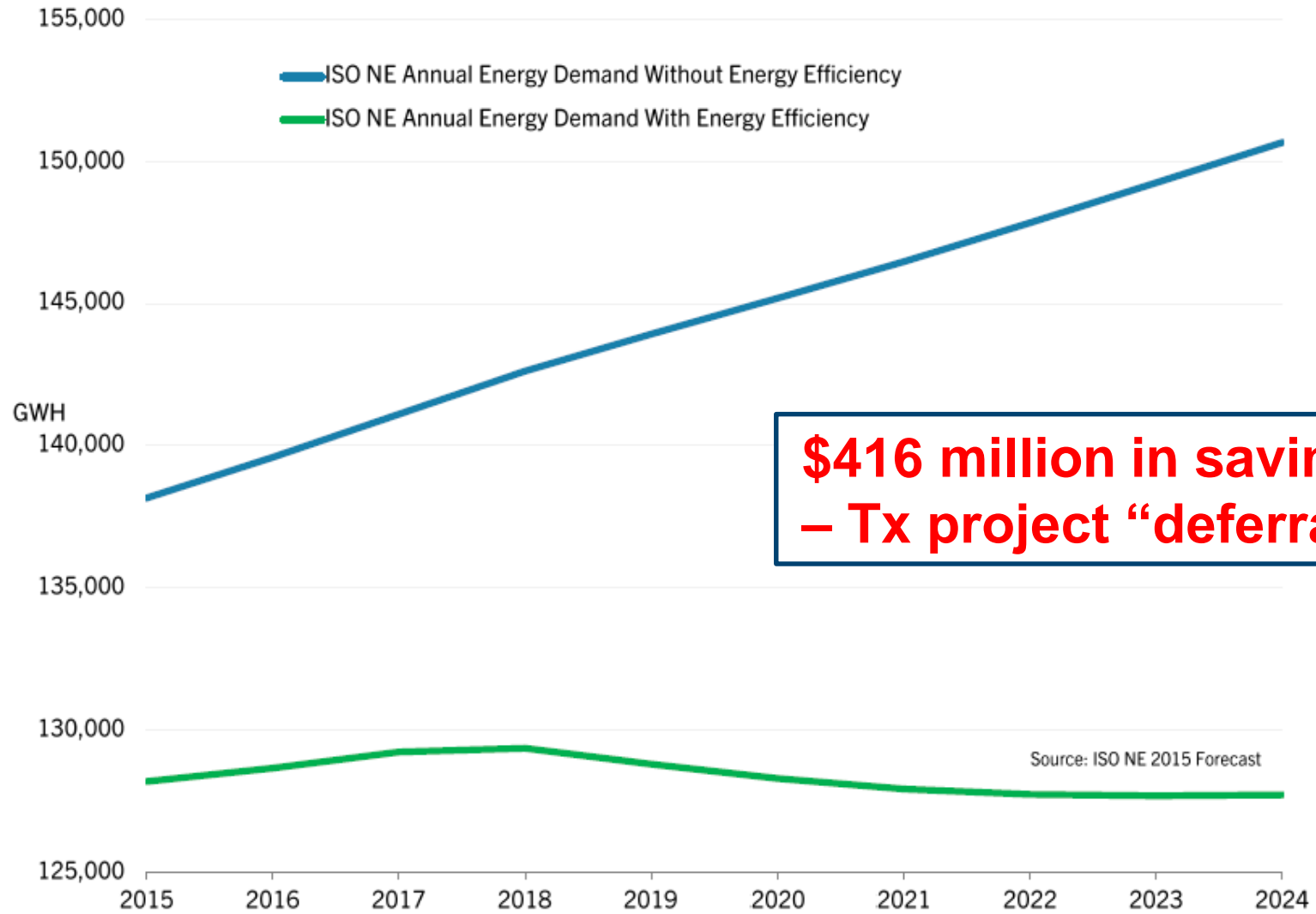
# Regional EE Investment Ramp-Up



# Growing EE Savings



# EE Sizing Transmission Grid



# Benefits of the Rhode Island Energy Efficiency Programs



Since 2008, Rhode Island has invested \$558 million in energy efficiency and consumers have realized \$1.99 billion in economic benefits.



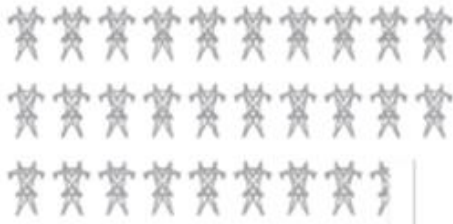
## GHG Reduction

Avoided 5.32 million metric tons since 2004

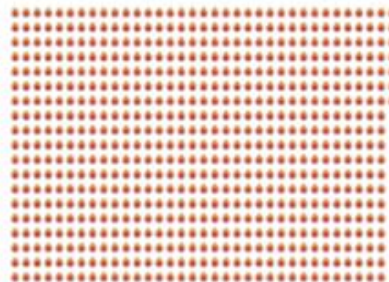
In 2014, 899 companies were involved with delivering Rhode Island's energy efficiency programs, with 77% of those companies located in Rhode Island.

The state's energy efficiency investments since 2008 will create over 25,000 job-years of employment economy-wide and add \$2.34 billion to Gross State Product.

## LIFETIME ENERGY SAVINGS



12,835 GWh of electricity since 2004



199 million therms of natural gas since 2009

In 2014, 618 full-time equivalent jobs were directly related to the delivery of the state's energy efficiency programs, a 15.7% increase from 2013.

# What's Next for EE and the Grid?



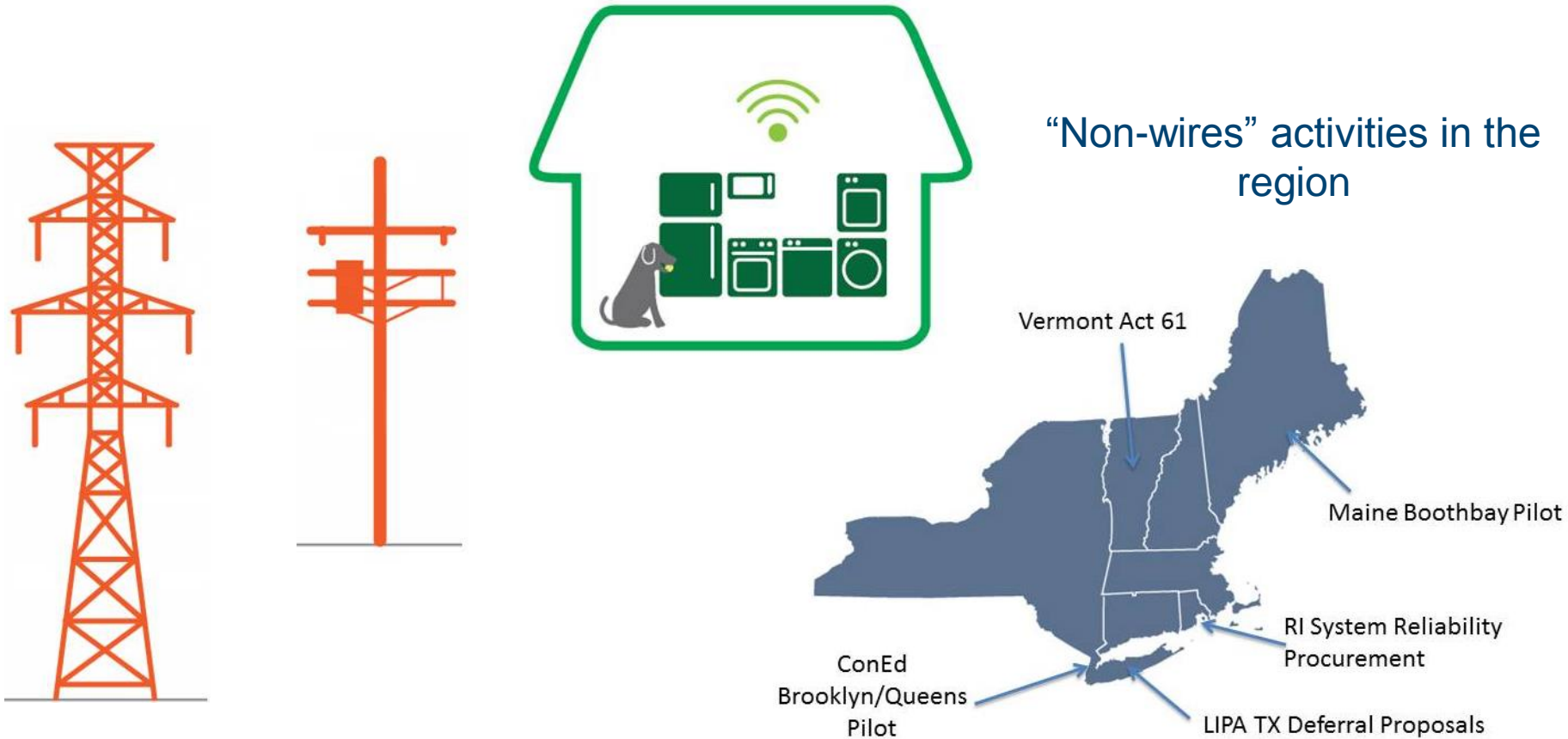
# UtilityVision



- **Utility incentives and grid planning need to evolve** to keep up with new technologies and our consumer and environmental goals.
- **Level the playing field for customer-side resources** to ensure that we select the best options for the environment and consumers.
- **Maintain the best of what we have** – energy efficiency investments, moving to clean power, reliability – while transitioning to a modern energy system.



# Planning Must Merge “Poles & Wires” with EE (and Other DER)



# RI's Approach to System Reliability

- **Least Cost Procurement law**
  - Requires standards and guidelines for “system reliability” procurement
  - Allows “procurement of energy supply from diverse resources”
  - RE, DG, CHP, and DR (including for local system reliability benefits through load control)
  - Has complementary EE planning track
- **Multiple purposes** – reduce costs, integrate RE, stability through resource diversity, planning accountability



# RI Guidelines for NWA Planning



- **Utility developed w/ EERMC** and reviewed by RI PUC every 3 years
- **Objective:** deploy cost-effective NWAs to defer or avoid T & D upgrades
- **SRP plan integrated w/ EE plan** – “manage demand and optimize grid performance, using customer side resources”
- **NWAs defined** to include baseline EE and geo-targeted EE for peak (also EV, storage, TVR)
- **Screening criteria** for NWA projects: need not asset based, wires solution costs > \$1 mil, load reductions less than 20% of peak, wires construction at least 36 months in future

# Current RI Pilot - DemandLink

**Problem:** Forecast overload for 2 feeders serving 5,200 customers in Tiverton/Little Compton (mainly residential) – summer peak

## Wires solution:

- Construction of a 3<sup>rd</sup> feeder at Tiverton Substation
- Estimated cost of \$2.9 million

## NWA solution:

- Defer upgrade by 4 years (to 2018)
- EE and DR tactics focused on reducing air conditioning and water heating load
- Provide load relief starting with 150 kW in 2014, up to 1 MW total by 2018



# Pilot Results

## Demand Reductions

- EE and DR together exceeding kW reduction targets to date
- Currently on track to defer new feeder to 2018

## Cost-Effective

- Average B/C ratio – 1.58 under TRC (w/o eval costs)
- Draft projection of 1.33 for life of project

## Strong EE Role

- EE currently projected to achieve 69% of kW reduction
- Pilot increased EE program participation by 49% in targeted area

## Solar PV

- Coordinating with RI OER's Solarize Initiative in 2015
- Estimated 198 kW in peak load savings so far (about 20% of kW reduction need)

# Challenges & Next Steps

- Reform utility financial incentives to match RI's consumer and clean energy priorities.
- Revise definition of “system reliability” to include “system optimization,” such as setting statewide goal or metrics for peak load reduction.
- Sustainable rate design that rewards strategic deployment of NWAAs (time- and location-specific prices).
- Avoid increasing fixed charges.
- Align regional transmission planning and financial incentives with state distribution goals.



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