Turks and Caicos Islands Resilient National Energy Transition Strategy

Public Consultations

3 October 2018, Providenciales

4 October 2018, Grand Turk

FORTIS TCI

ROCKY MOUNTAIN INSTITUTE

CARBON WAR ROOM

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Objectives for Today

- Share an overview of the R-NETS process
- Solicit feedback on key process inputs
- Open a dialogue around electricity sector planning

Agenda

- Prayer
- Opening Remarks
- Introductions
- Resilient National Energy Transition Strategy
  - Overview of R-NETS process
  - Present R-NETS scenarios, analysis structure, and load forecast
  - Open comment and question period
- Summarize feedback and discuss next steps

Rocky Mountain Institute (RMI)

Since 1982, Rocky Mountain Institute (RMI) has advanced market-based solutions that transform global energy use to create a clean, prosperous, and secure future. An independent, nonprofit think-and-do tank, RMI engages with businesses, communities, and institutions to accelerate and scale replicable solutions that drive the cost-effective shift from fossil fuels to efficiency and renewables.

Team Members:

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R-NETS Process

Why undergo an R-NETS process?

- To explore viable options for producing and transmitting electricity to Turks and Caicos Islanders.
- To balance the interests of all customers and stakeholders involved.
- To identify a mix of resources that will meet near and long-term consumer energy needs in a manner that is aligned with shared priorities for the electricity sector.
- To use an independent and objective approach.

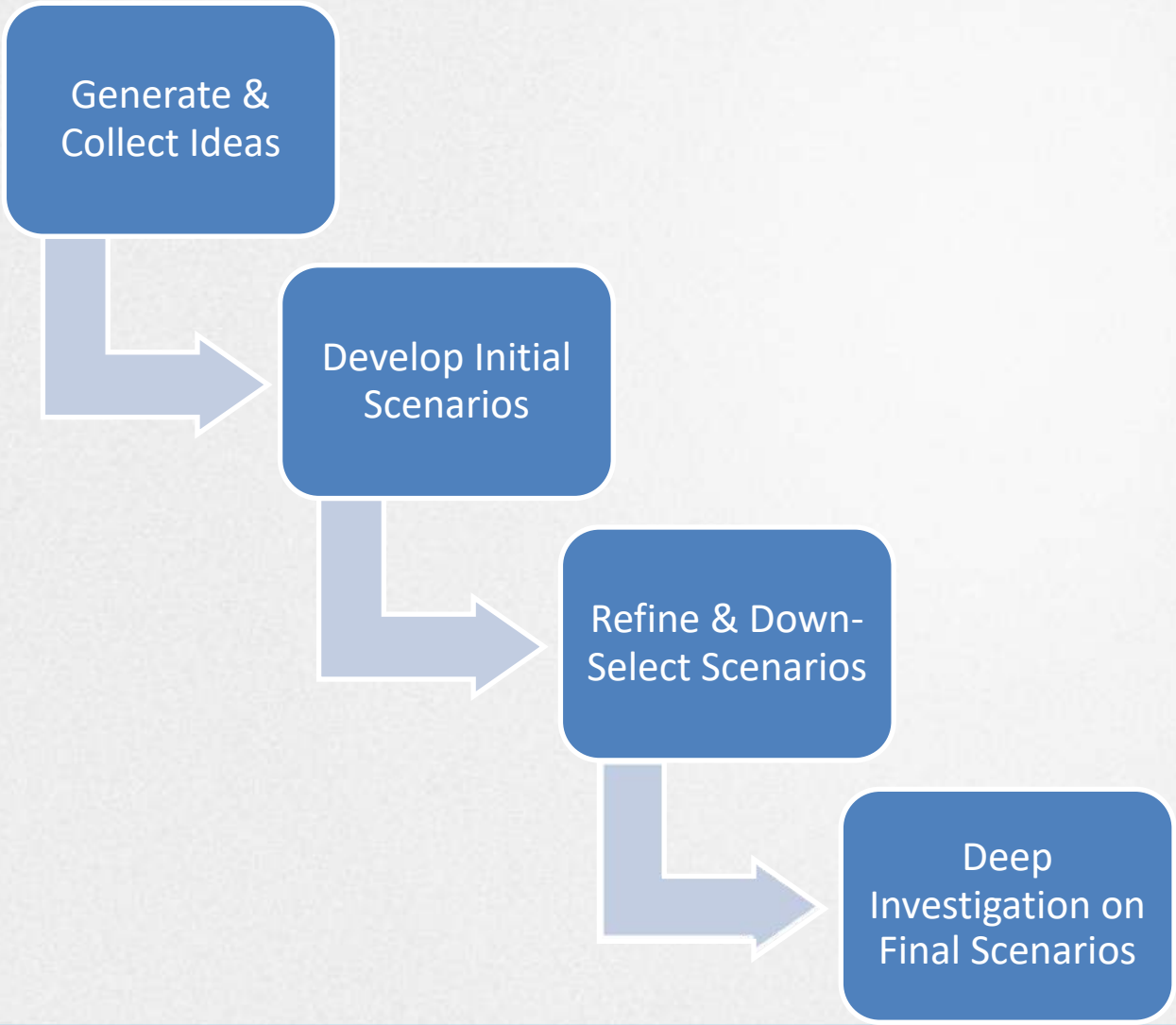
What questions will we answer with the R-NETS?

- Resource Options:
  - What are the supply- and demand-side resources that can be utilized in planning the electrical system of the future?
  - What are the current and predicted costs of these resources and how do they compare to the current business as usual (BAU) plan?

- Resource Impacts:
  - How can these resources be integrated into the current system?
  - What are the impacts of various energy options on utility economics, costs to the customer, system reliability, and system resilience?

- Forward Plan:
  - What are the specific roles of the government, utilities, developers, financial institutions, and local communities to enable and implement this transition?

Overview of R-NETS Process



Partners and Roles

	Management and Coordination	Technical Analysis	Oversight and Approval	Stakeholder Input Coordination
• RMI	●	●		●
• FortisTCI		●	●	●
• TCIG		●	●	●
• Other Technical Partners		●		

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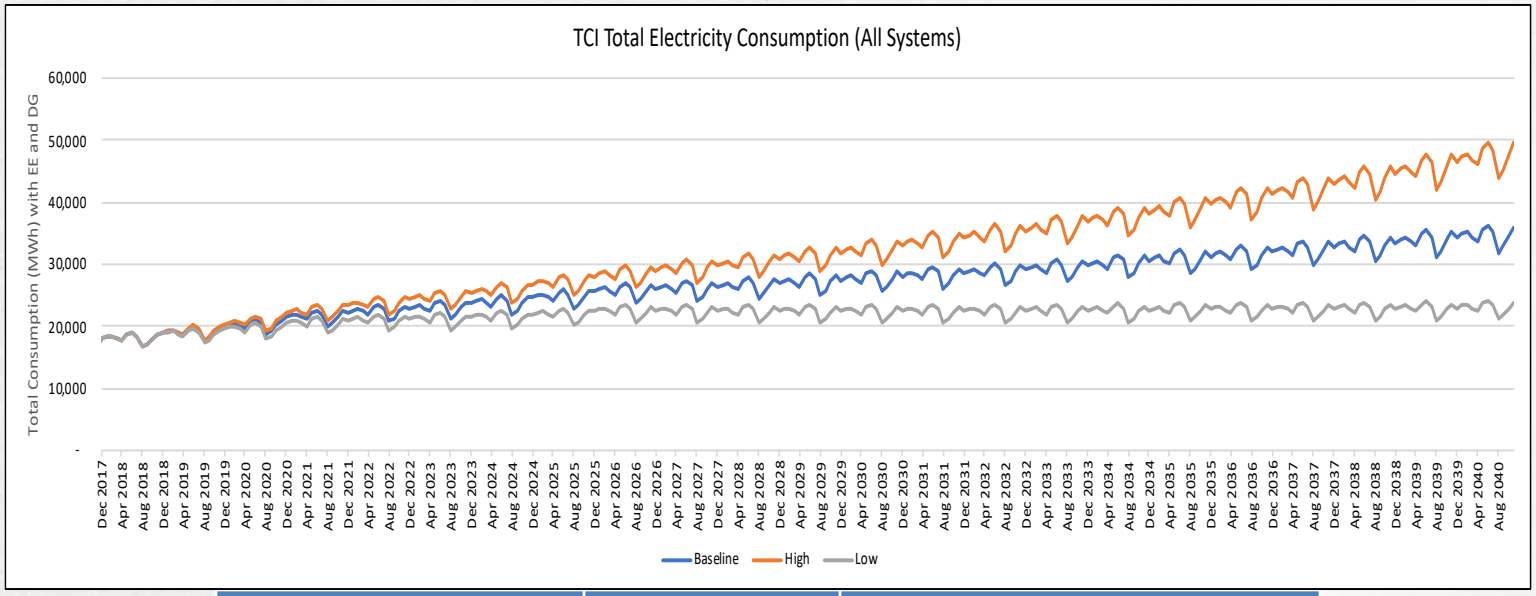
R-NETS: Completed and Upcoming Components

R-NETS Priorities, Defined by Partners

Scenarios will be evaluated using metrics that relate to each priority.

1. **Least-Cost**
2. **Reliable**
3. **Resilient**
4. **Environmentally Sustainable**

Load Forecast Summary



Category	2017	2040
Elec. Consumption (Million kWh)	218.67	415.04 (Base)
		567.11 (High)
		275.66 (Low)
Peak Demand (MW)	41.5	79 (Base)
		109 (High)
		54 (Low)

Individual Resource Reviews

Potential resources were first investigated individually, to inform the choice of scenarios to examine in detail.

Resources investigated include:

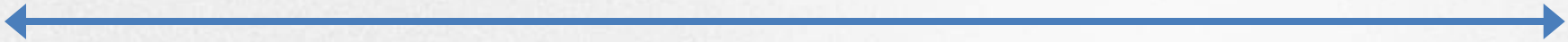
- Diesel
- Natural Gas
- Ocean Thermal
- Ocean Tidal
- Organic Rankine Cycle
- Solar
- Storage
- Waste to Energy
- Wind

Recommendation

- Include four resources for deeper investigation within scenarios:
  - Diesel, Natural Gas, Solar, Storage

- While other options could be considered in the future, their near-term applicability in TCI may be limited given cost and other factors:
  - Ocean Thermal, Ocean Tidal, Waste to Energy, Wind

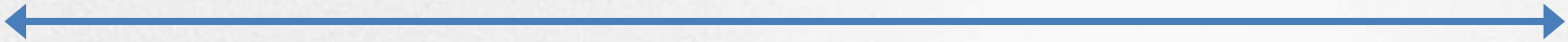
Location Spectrum



Distributed: generation resources are located in multiple locations

Centralized: generation resources are located in mainly one location

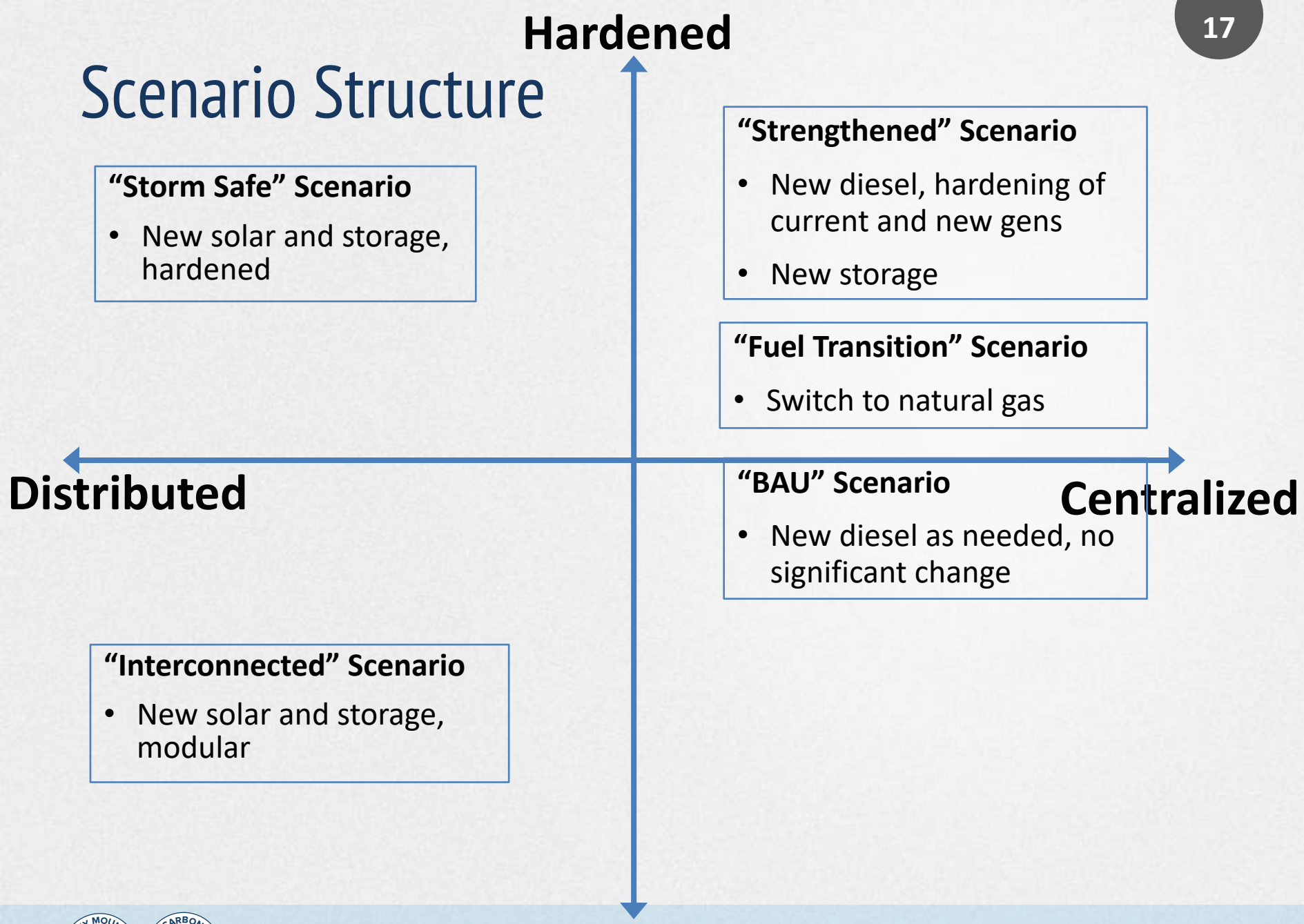
Changeability Spectrum



Hardened: generation resources are reinforced, firmly established, toughened

Modular: generation resources are flexible, versatile, adjustable

Scenario Structure



Underway: Scenario Analysis

- Scenario Optimization
  - How much of each new resource should be included?
- Scenario Operation
  - How will each scenario operate (hourly dispatch)?
- Scenario Evaluation
  - How does each scenario score for each measurement?

Open Comment and Question Period

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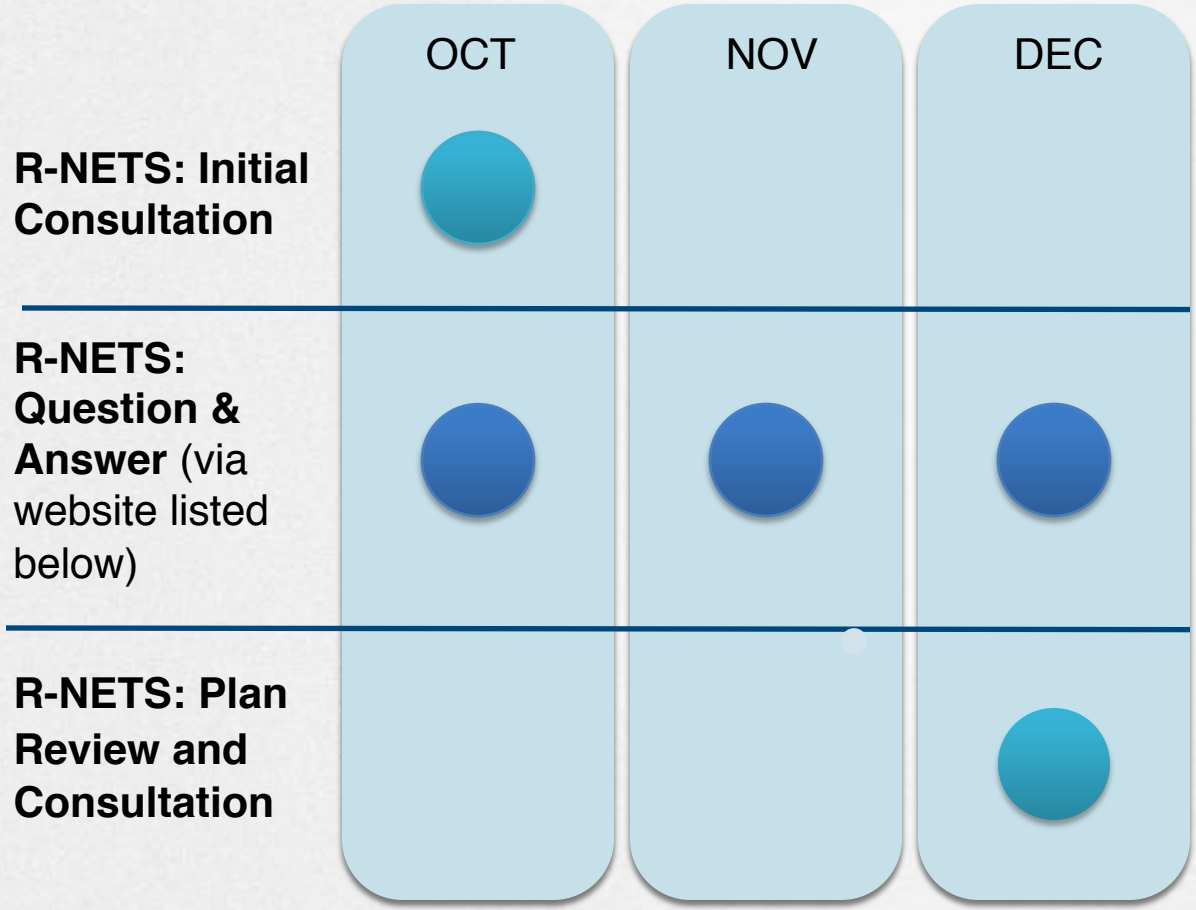
R-NETS: Next Steps and Stakeholder Consultation Process

Stakeholder Consultation Process



We Welcome Your Comments: https://www.surveymonkey.com/r/DLXR35K

Thank you

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