OFFICE OF
INSULAR AFFAIRS

Goals
Lower Costs
Improve Quality of Service
Long Term Plan

Impacts
Resiliency
Higher Value

Outcomes
Solar
Energy Efficiency
Baseload Fuel

Commonwealth Utilities Corporation

2015 Integrated Resource Plan

What is an Integrated Resource Plan (IRP)?

It is a comprehensive decision-support mechanism that creates a long-term roadmap using financial modeling and technical analysis to determine the best options for supplying electricity over the long run at the least possible cost. It outlines the risks and uncertainties inherent in the electric utility business.

Using a federal grant from the Office of Insular Affairs, the Commonwealth Utilities Corporation (CUC) hired Leidos Engineering, LLC, a renowned IRP consultant, through a competitive bid process. The National Renewable Energy Lab (NREL) was also consulted.

A Request For Proposals (RFP) was issued in November 2014 and CUC received responses from 9 private companies proposing 16 potential renewable energy and fossil fuel generation projects generating at least 1 megawatt (MW) of power. CUC, Leidos, and NREL analyzed all responsive bids based on their costs, benefits, and market sensitivities.

Key Findings

The IRP process helped CUC identify energy supply options and found that demand side management and large solar installations are projected to be less costly than fossil fuel generation options (i.e. diesel generators).

➢ Demand Side Management (DSM)

The purpose of DSM is to optimize electricity generation and transmission and improve the energy efficiency, increase energy conservation, and reduce peak demand (when electricity demand is highest).

➢ Solar

Utility-Scale Solar is projected to be a less costly option than fossil fuel generation options.

➢ Baseload Fossil Fuel Generation Options

This is a less economic option and also poses a greater environmental impact.

Next Steps

Additional studies are needed to clarify costs and impacts associated with potential generation options. Other factors should be considered before determining the best energy supply solution for CNMI, such as disaster resiliency and climate change. CUC's next steps in energy resource planning include:

1. Develop implementation plan with specific milestones
2. Collect operational data
3. Explore fuel price hedging program to compensate for the inherent volatility in fuel prices
4. Conducting a cost of service study to identify the true costs of service to assess rate design modifications

Resiliency Factors

- Renewable Integration
- Infrastructure
- Future growth
- Fuel market volatility
- Financial stability
- Climate change
- Natural disasters

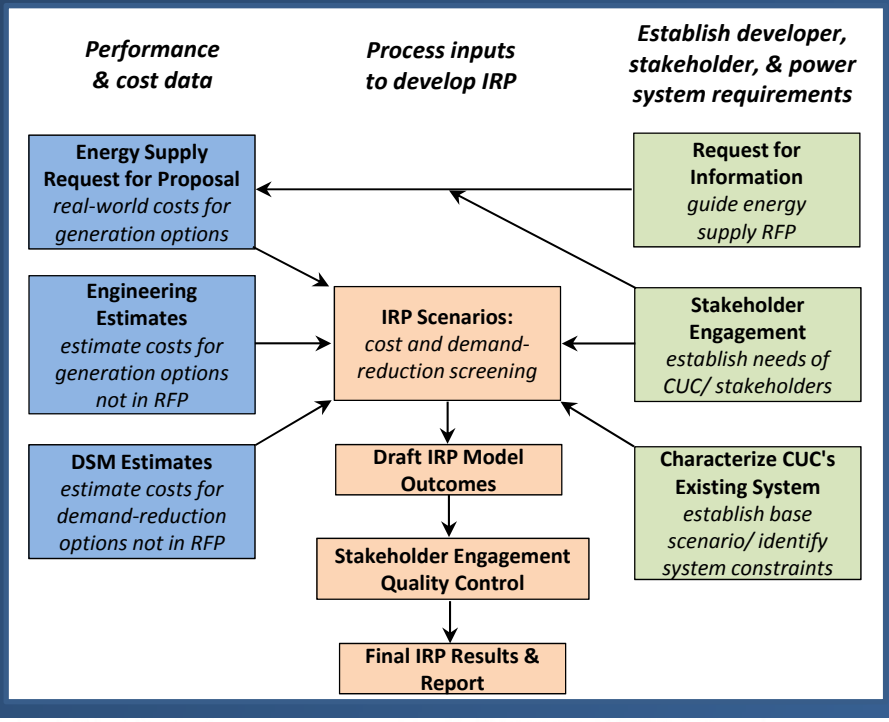
Energy Option	Relative Cost
DSM	Low
LNG	Medium-Low
PV	Medium
Heavy Fuel Oil	Medium
Light Fuel Oil	High

Stakeholder Input → Analysis → Financial Modeling → Key Findings

The Commonwealth of the Northern Mariana Islands (CNMI) is largely dependent on diesel fuel for its electricity supply and its power plants are aging. CUC developed an IRP examining its options to accommodate future growth and replace aging power plants using an optimal mix of energy resources and DSM energy efficiency measures.

IRP Process included:

- Engaging stakeholders
  - Stakeholders indicated that lowering electricity rates should be the primary goal of the IRP. Stakeholders also wanted CUC to evaluate the potential for liquefied natural gas (LNG) and DSM options as part of the resource plan.
- Developing a comprehensive IRP strategy
- Characterizing CUC's power system parameters
- Developing and issuing a request for proposals (RFP) for energy supply
- Developing cost and performance estimates for energy supply and demand-reduction (energy efficiency and conservation) options
- Screening potential resource options
- Conducting scenario modeling of options



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