

## Developing an Energy Policy for Macau

### The Challenge

Macau has recently undergone significant changes. Economic growth has rebounded after several years of stagnation and is expected to continue over the intermediate to long-term, with important implications for its energy future. At the same time, while maintaining its own government system over the next fifty years, the Macau Special Administrative Region (SAR) must navigate its energy future in relation to the energy policies of the People's Republic of China (PRC), Hong Kong SAR, Guangdong province and the Zhujiang special economic zone. Moreover, the Macau SAR is completely dependent on imports for its fossil fuel requirements and has a high reliance on petroleum based fuels. This dependency arises from the fact that Macau has no indigenous sources of energy and must rely on external sources of energy supply to meet its internal requirements.

The increased demand for energy in Macau SAR has brought important challenges to the government in moving forward with efforts to introduce reform and set up a modern regulatory framework. These challenges include:

- Diversification of energy supplies
- Insuring the performance of the electric power sector and security of supply
- Establishing a legal and regulatory framework to introduce competition into the sector and attract increased private sector participation to build new capacity
- Increasing energy efficiency
- Competitive power pricing and tariff rationalization
- Identifying alternative fuel sources such as renewables (solar, wind, etc.)
- Deregulation and unbundling of services

Confronted with these issues, the government of Macau recognized the need to implement a policy framework that would support complex decisions affecting the energy sector in particular, and the economy in general, in a consistent and transparent manner. The energy policy needed to be flexible enough to adapt to the changing environment of Macau, yet still achieve the long term goals for the sector — which were to promote fair competition, provide secure and high quality energy supplies in the most economically efficient manner, and contribute to the sustainable development of the region.

### Solution

The government of the Macau SAR turned to Nexant for energy sector reform, including the establishment of a modern regulatory framework, as well as a comprehensive review of the viable energy resource alternatives available. Specifically, Macau needed to make critical decisions on the overall structure and capacity of the region's electricity



### Project Overview

**Client:**

Government of Macau  
SAR

**Location:**

Macau

**Nexant Responsibilities:**

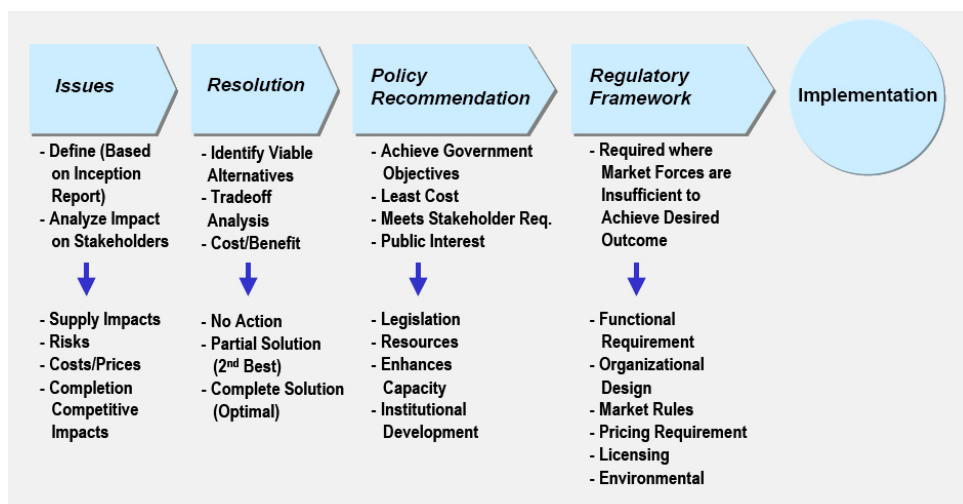
Detailed market analysis,  
policy and regulatory  
advisory, economic  
forecasting, scenario  
planning



and gas network as well as a regulatory framework that will ultimately determine future economic growth. Nexant took a phased approach to the study and provided:

- Detailed analysis of future energy consumption and supply patterns based on selected planning scenarios
- Evaluation of introducing natural gas in the MSAR energy sector and development of key policy recommendations to promote the supply and development of a gas sector
- A framework for the future of electricity sector in terms of supply and structure along with specific policy recommendations

*Overview of Nexant's policy assessment approach*



Nexant's recommendations have been well received by the Macau SAR and will help form the basis for a broad range of energy initiatives, including:

- **Energy Policy and Planning.** Expanded energy supply; increased private sector financing; industry restructuring; increased system reliability; reduced fuel import dependence
- **Energy Supply Diversification and Imports.** Tradeoffs of higher cost, less secure fuel sources for lower cost, more secure, environmentally beneficial sources
- **Energy Efficiency.** Increased supply efficiency; increased energy productivity in industry; increased private investment in efficient equipment and processes

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