

EBS  EnergieBedrijven Suriname



N.V Energiebedrijven Suriname

TOWARDS A CARBON ZERO FUTURE

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Introduction

1908 -
1909

- Dutch Indisch Gas Company (N.I.G.M.) received concession
- The construction of Suriname's first gas company
- Construction of the electrical power company in the city

1932

- Commencement of operations
- Establishment of Hygiene and Safety Department
- Establishment of the outpatient's clinic

1990's

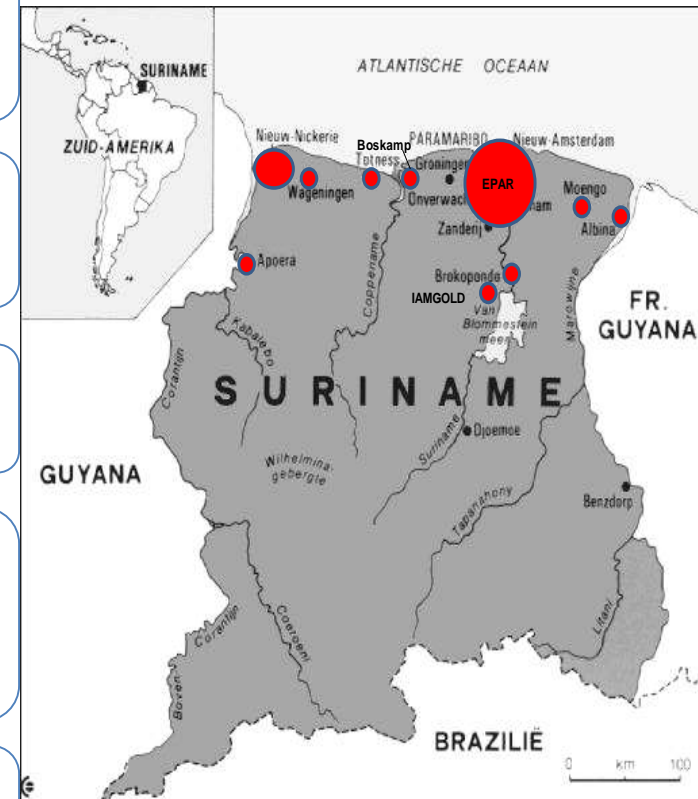
- Environment, Security, Fire protection and Safety Department

2004

- Environmental department
- Security, Fire protection and Safety Department
- Improved communication with the medical doctor of the outpatient's clinic

2011

- Environmental, Health, Safety and Quality (HSEQ) department
- Energy Audit department
- EHS Policy



Some relevant effects of climate change on the power generation, transmission and distribution

- **Drought that has been recorded in 2004-2005, 2009, 2013 and 2014**
 - Water level of the Brokopondo reservoir decreased;
 - Less water was available for the generation of electricity;
 - the Government and the EBS in cooperation with the Suralco LLC were forced to install temporary rented diesel generators;
 - Less energy for the household, commercial and industrial activities;
 - Algae blooms in the reservoir have caused for operational problems.
- **High temperatures in September and October**
 - Transmission and distribution losses occur because of the decrease of the thermal efficiency;
 - To maintain operational efficiency cooling of transformers are often required, which in turn increases the energy demand for cooling.



Developments towards the implementation of CO2 reductions implemented

- **Environmental and Social Impact Assessment for the 84 MW Power Plant**
 - Emissions standards implemented according to the World Bank
 - HSEQ Management Systems according to ISO
 - Energy Management
 - Monitoring



Developments towards the implementation of CO2 reductions implemented

- **2013: International Development Bank Loan 1(ongoing)**

- Support to improve Sustainability of the Electrical Service
- Component 2: Atjoni Area
 - Installation of the hybrid thermal – RE system interconnected to the 12 kV/220V local distribution network;
 - The existing diesel generators will be complemented with 500 kW solar PV systems to feed the distribution network;
 - Agreement signed with the Village Captains in order to consider the traditional, health, safety, quality and environmental aspects.

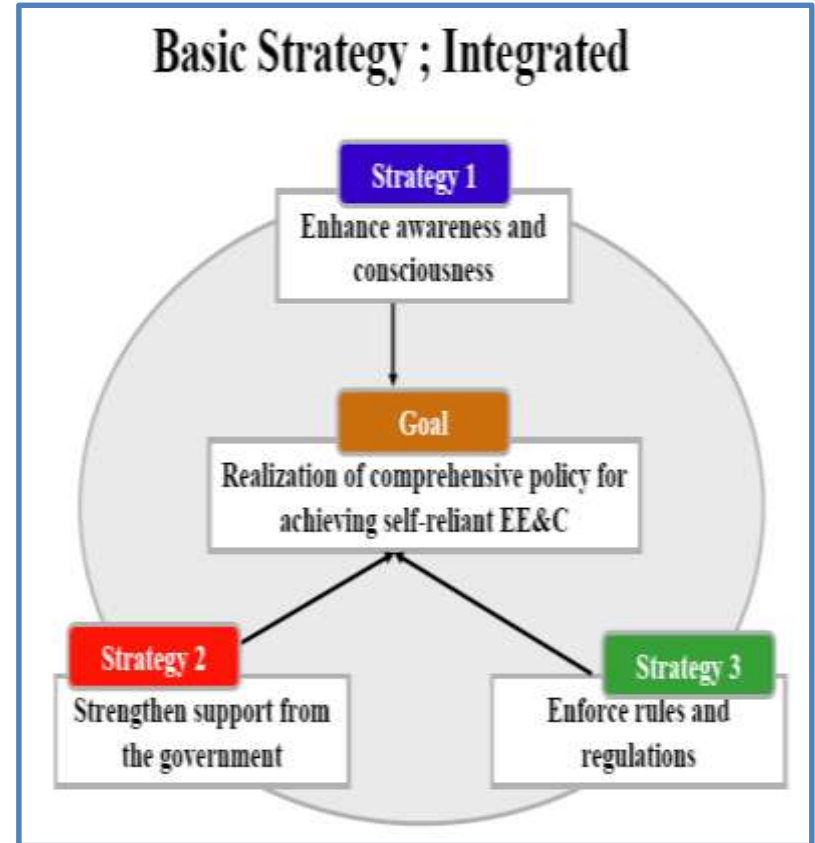


Developments towards the implementation of CO2 reductions implemented

- **2013: International American Development Bank Loan 1 (ongoing)**
- Support to improve Sustainability of the Electrical Service
 - Component 2: Impact Evaluation
 - Aim: support in the design and implementation of future rural electrification projects;
 - 1st Survey of 12 villages (control group) and 5 loan villages according to:
 - Living Standard Measurement Studies of the World Bank
 - Status of the energy aspects
 - 839 surveys
 - 2nd Survey: 2 years after the villages received the electricity

Developments towards the implementation of CO2 reductions implemented

- **2015: International American Development Bank Loan 2 (start with implementation)**
- **Support for the Implementation of the EBS Investment Plan**
 - Component 1D: Implementing a program to promote Renewable Energy (RE) and Energy Efficiency.
 - EBS will execute an Energy Efficiency Framework to promote EE measures and awareness, in close coordination with the Ministry of Natural Resources.
 - The EEF is intended to encourage the conservation and efficient use of energy by developing activities, including awareness-raising campaigns and energy education programs, in order to improve the population's understanding of the value of the energy.
 - Energy Efficiency Framework Plan.



Adopted from JICA Training: Improvement of Energy Efficiency Policies

Developments towards the implementation of CO2 reductions implemented

- March 1, 2016: Approval of the Electricity Law and Law on Energy Authority Suriname
 - Electricity Law:
 - Articles on sustainable electricity and implementation of energy efficiency guidelines
 - Explanatory Memorandum: High environmental quality
 - This refers to environmentally friendly electricity generation, whereby the highest possible environmental quality is pursued:
 - » The emission of CO2 and other greenhouse gases in the entire chain from mining to energy consumption, should be as low as possible

Developments towards the implementation of CO2 reductions implemented

Other activities, research and feasibility studies that have been conducted:

- 2004: Development of the 161kV Transmission Line
- 2008: Suriname Power Sector Assessment and Alternatives For Its Modernization: A Preliminary Assessment Report -> Renewable Energy (KEMA)
- 2013: Energy Efficiency “Slim met Stroom” Awareness Campaigns
- 2014: Feasibility Study Waste to Energy Ornamibo (DNV)
- 2015: Energy Efficiency Framework Plan 2014 – 2016

Lessons learned

- Building partnerships with relevant stakeholders
- Improving awareness and changing behaviour
- Managing facilities and improving operations
- Investment in institutional strengthening and capacity building
- Financial management
- Improved HSEQ management



Next steps

- Development of the Strategic Business Plan 2016 – 2026:
 - RE, EE, CO2 reduction, corporate social responsibility
- Development of the Electricity Sector Plan according to the Electricity Law
- Increasing awareness
- Collaboration with institutions: ADEK University, Telesur, CDB, IsDB etc.



THANK YOU

