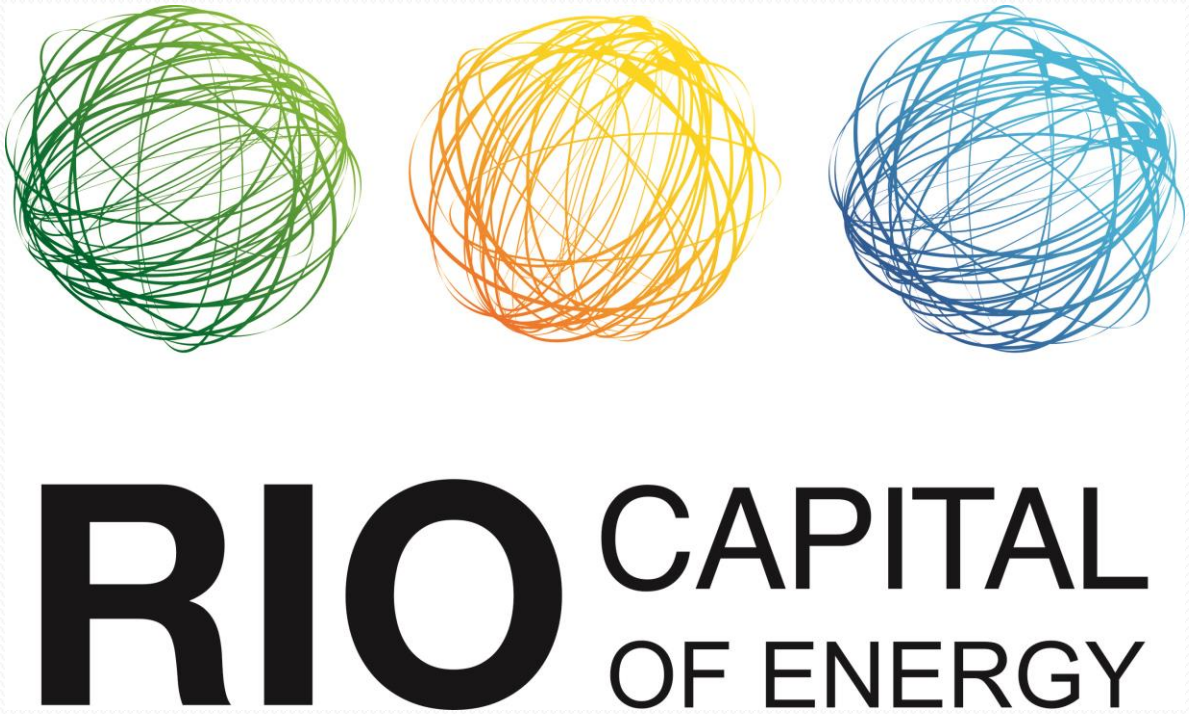


Ago 2014

MOTIVATION

- The State of Rio de janeiro's importance to the Country energy security;
- Main Oil & Gas producer State;
  - 85% of national oil production;
  - 28 MM m3/d of natural gas – 45% of brazilian production
- Main Thermoeletric power generation facilities and the only two nuclear plants;
- Site of major brazilianan foreign companies in the energy sector
- Existence of State Universities and Research Centers of Technological Development with world-class training;
- Prominent position in the international debate on sustainable development.

GOALS

“Mobilization society on concentrating resources around de energy sector, in order to make Rio de Janeiro a world reference in sustainable energy”

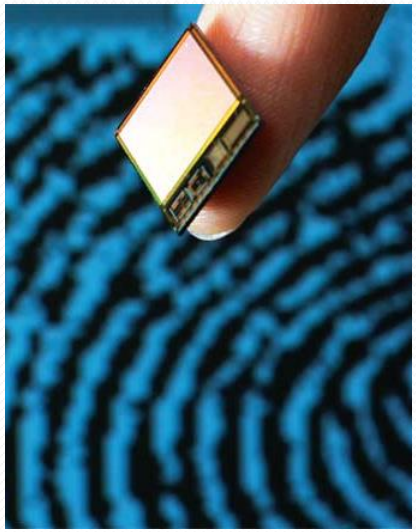
GUIDELINES

I. Prioritizing of energy security and sustenable growth of the State
II. Minimizing costs of energy supply
III. Rational Uses of energy sources by observing the minimun impact on the environment
IV. Maximizing energy sources revenues produced in the State
V. Maximum contribution to increase work and income generation in the State

DEVELOPMENT

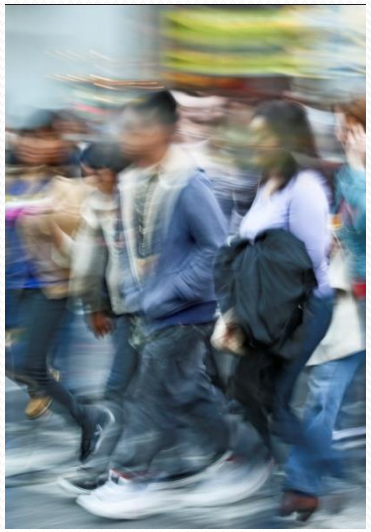
Four Pillars

Energy Efficiency



Technological Innovation

Low Carbon Economy



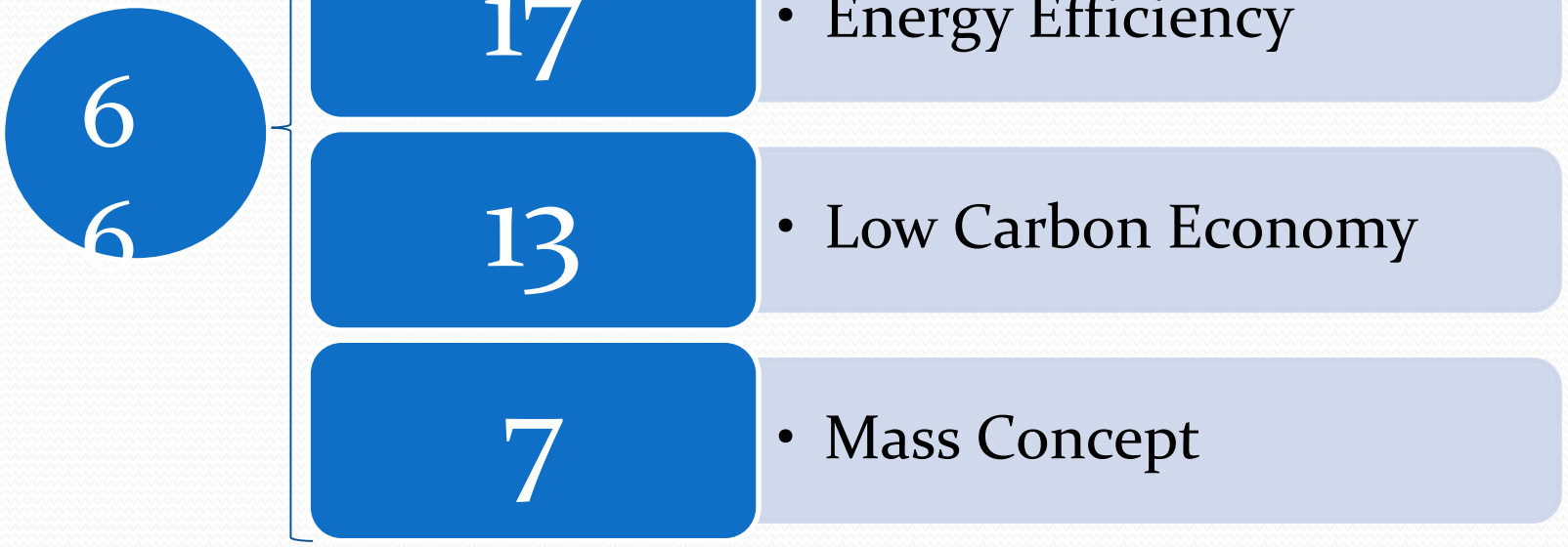
Mass Concept

ESTRATEGIC COMMITTEE

PROJECTS

- ✓ 66 projects to start the portfolio to be implemented by 2015
- ✓Investiments around R$ 2,2 billion
- ✓Dinamic portfolio, always open to new projects

PILLARS PROJECTS DISTRIBUITION



PROGRESS

9 ready projects

TECHNOLOGICAL INNOVATION

Center Coppe-Guodian technology in wind energy	Obtaining Biodiesel enzyme technology	Green bus	Platform for bus electrical traction	Laboratory for clean fuels
Smart City Buzios	Smart Grid Light	**Solar State Public Library**	**Maracanã Solar**	Solar Energy in Marine Aquarium
Innovation Laboratories UERJ	Harnessing Hydrogen	Improvement planning models	Laboratory of Ultra-High Voltage	Improvements in Energy Management System
Laboratory of Smart Grid	New computational improvements	Construction Material Vikaflex	**Generating electricity with photovoltaic modules**	**Utilization of sewage sludge to generate electricity**
WG Electric Vehicles	**Solar Challenge Brazil**	**Electric water taxi**	**Solar Energy the Big Island State Park**	Photovoltaic energy in CEFET
Mapping the rooftops Rio de Janeiro and Niteroi	Solar Atlas	Renewable Energy Sub-Sea	Studies of Subsea Cluster structuring	

ENERGY EFFICIENCY

Efficient Community	Light Recycles	Energy Optimization of CPD's	Eco-efficiency in industry and commerce	Energy Efficiency Lab UERJ
Energy Efficiency at Fiocruz	**Energy Efficient Water and Sewage Three Rivers**	Energy Efficiency in Public Buildings	Energy Efficiency in Micro and small Business	Ethanol Production Incentives
UFRJ Green Fund	**Cogeneration RJR**	Energy efficiency Planetarium	**Efficient Lighting**	**Efficient films**
Consciência Ampla – Exchange of Refrigerators	Digital Energy Efficiency			

LOW CARBON ECONOMY

Motor Ciclo Diesel consumindo etanol	Diesel-Gas Ferry boat	Fundão Solar	Save program	Kit for hybrid electric vehicle low cost
Diesel-Gas Bus	Green Zones	Eco-efficient system of environmental sanitation and bioenergização	Utilization of waste gas for power generation	Renewable Natural Gas
Trucks Fleet Renewal	Energy Efficiency Fund Gas	Production of GNR in Landfill Two Arches		

MASS DISSEMINATION OF CONCEPT

Conpet at School	Technical Cooperation GIZ	Massification of RCE Concept	Consciência Ampla Saber – Lectures and Workshops	Demonstration Centre Smart Grid
Consciência EcoAmpla	Consciência Ampla Future			

BÚZIOS SMART CITY

- ✓Automation of electric grid
- ✓Electric Mobility Plan
- ✓LED Lighting with remote control points
- ✓Smart Metering
- ✓Distributed Power Generation from renewable sources
- ✓Social projects
- ✓Home automation
- ✓Wireless Internet
- ✓Centralized Control System
- ✓Building Monitoring Center

cidadeinteligente búzios

- ✓Coordination: Ampla Energia e Serviços S.A.
- ✓Budget: R$ 37,6 million
- ✓Partners

Ampla / Endesa Brasil / Endesa Espanha / Enel / Aneel / Governo do Estado do RJ Prefeitura de Búzios / UFRJ / UFF / PUC / UERJ / FGV

GREEN POLO

Coordination:
SEA

Partners :
SEA, CODIN, UFRJ, CEG,
LIGHT-Esco, LOREAL, GE

✓Located on Bom Jesus Island, will gather Research Centers for technology development, in line with industries and universities.
✓Sustenable infrastructure in centralizes steam generation, cooling, power and cogeneration systems.
✓LED street lighting, recycling system and use of rainwater, sewage treatmenting stages and paved streets with asphalt rubber.
✓Sustenables Buildings

SMART GRID LAB

Coordination :
Eletrobrás Cepel

Budget: R$ 19 million

Partners:
Eletrobrás, Cepel, Furnas, Eletrosul, Chesf, Eletronorte, MME and World Bank

Schedule for completion by apr/2015

Implementation of laboratory infrastructure for experimental research and evaluation of solutions smart grid (Smart Grid)

RENEWABLE NATURAL GAS

Coordination:
Sedeis

Partners:
Sedeis, CEG, CEG Rio, Agenersa, Alerj

Law nº 6.361 of 19/dec/2012, establishes the Renewable Natural Gas State Policy, encourages the production deployment and makes mandatory the purchase of gas concessionaires up to 10% of conventional gas distributed in Rio de Janeiro.

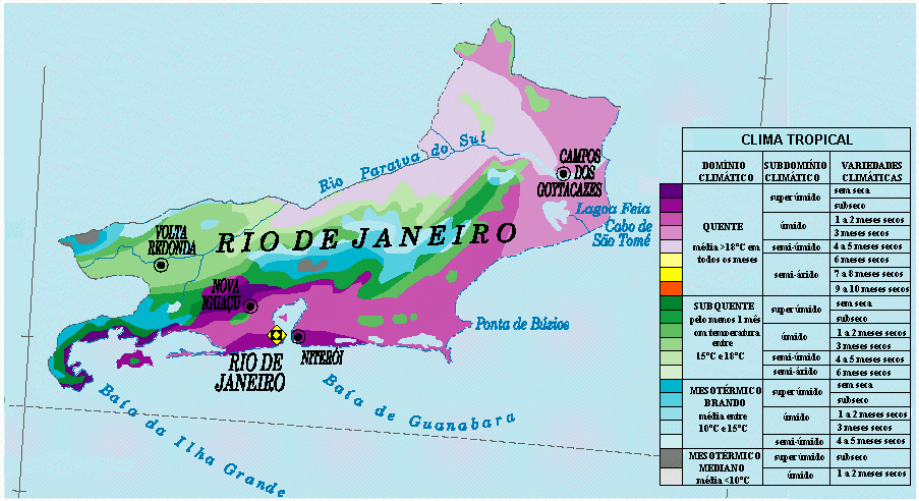
TWO ARCHES PROJECT

Coordination : Ecometano

Partners: Ecometano / Osafi Empreendimentos / CEG

Production of renewable natural gas in landfill two arcs in São Pedro da Aldeia, with initial production capacity of 10,000 m³ / day, up to 15,000 m³ / day in 2018.

RIO DE JANEIRO'S SOLAR ATLAS



✓Coordination : Sedeis
✓Partners:
PUC-Rio, UTE Norte Fluminense, EDF e EGPE Consult

Elaboration of the potential use of solar energy in the state of Rio de Janeiro for power generation and water heating.

INCREASE ETHANOL

Coordination:
Seag, Sedeis

Partners:
Seag, Sedeis

Differential treatment of ICMS (VAT) for expand ethanol production in Rio de Janeiro State. Establishes the obligation of new investmentes in cultivation and production processes.

GREEN FUND

Coordination:
SEA, Sedeis e Sefaz

Partners :
SEA, Sedeis, Sefaz, UFRJ, Light

Application of ICMS resources from energy bills of UFRJ – Fundão Campus in energy efficiency projects and technological innovation.

ELECTRIC VEHICLES

Coordination:
Sedeis

Partners:
Sedeis, SECT, SEA, Nissan, Light, Ampla, Petrobras Distribuidora, Rio Negócios, Inmetro, BNDES

Creation of Working Group to study the viability and infrastructure required for deployment of electric vehicles plant in Rio de Janeiro.

USE OF SEWAGE SLUDGE TO GENERATE ELECTRICITY

Coordination :
UTE Norte Fluminense

Partners:
Cedae, P²IT Engenharia, Jordão Engenharia

Budget: R$ 287 thousend

installation of a 50 kW turbogenerator from urban sewage sludge in sewage treatment Pavuna Station, providing the Cedae a generating unit self sustained.

PHOTOVOLTAICS IN CEFET

- ✓Coordination: GIZ
- ✓Partners:
  Cefet, Light, Aneel e Sedeis

Installation of Photovoltaic Panel in Cefet unit at Maracanã

ECO-EFFICIENT SYSTEM OF ENVIRONMENTAL SANITATION AND BIOENERGIZAÇÃO

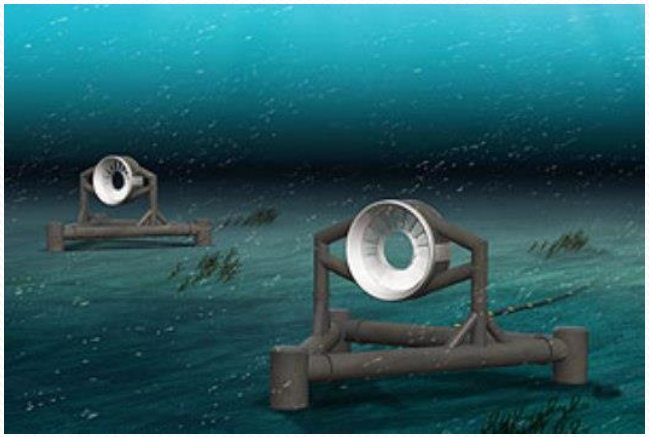
Coordination : Grupo Canabrava

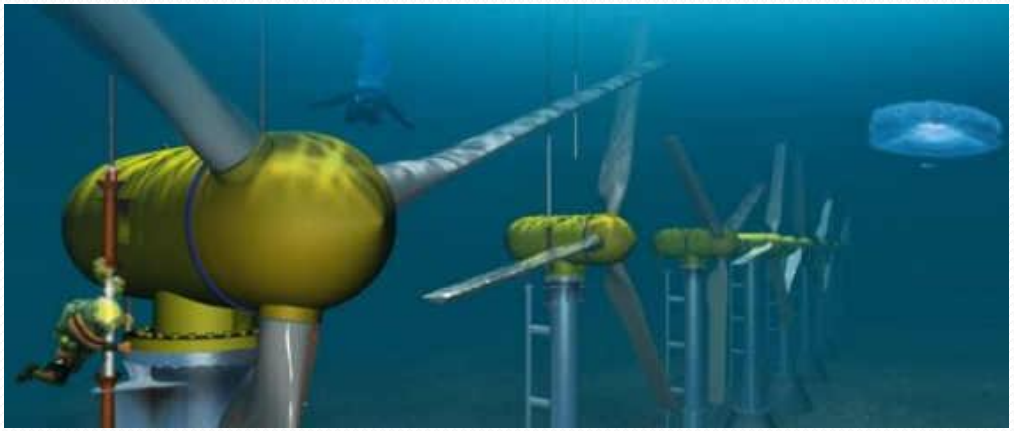
Partners:
Grupo Canabrava, BNDES and Finep

Budget: R$ 10 million

Vinasse treatment system, effluent from the ethanol production process, with a view to energy recovery, biogas to generate electricity and capture carbon credit.

SUB-SEA ENERGY





✓Coordination : Sedeis
✓Partners:
ONIP, UTE Leonel Brizola Petrobras

Study on energy efficiency and rationalization of electricity generation under the seabed to serve the production process of oil and gas in deep waters.

MAPPING THE PHOTOVOLTAIC POTENTIAL OF ROOFS

✓Coordination : GIZ
✓Partners:
IPP, Light, Ampla, EPE e Sedeis

Elaboration of the PV potential of the cities of Rio de Janeiro and Niterói, from aerophotogrammetric survey.

PLANETARY - ENERGY EFFICIENCY

Coordination:
Light Esco

Partners:
Light, Light Esco e Prefeitura do Rio de Janeiro

The project aims to improve the energy efficiency of central air conditioning system, recovery of the thermal storage tank and deployment of educational project for the use of solar energy.

DEMONSTRATION CENTER ENERGY EFFICIENCY AND SMART GRID

Coordination:
Light

Partners:
Light e Light Esco

Area of 400 m², which will play a smart city with the characteristics of Rio de Janeiro, with interactivity, simulations, games and equipment, in order to encourage visitors to adopt efficient consumer habits and combat energy waste, the first being the kind in Latin America.

WEB SITE

www.riocapitaldaenergia.rj.gov.br

RIO CAPITAL DA ENERGIA

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