



INPRO Dialogue Forum
“Drivers and Impediments Regional Cooperation on the Way to Sustainable Nuclear Energy Systems”,
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I. INTRODUCTION

I.1 LOCATION

- NIGER is a landlocked country Located in West Africa
- **Area: 1,267,000 km².**
- Sharing border with countries as below :
- East: Chad Republic,
- West: Mali and Burkina
- North: Libya and Algeria
- South: Nigeria and Benin



I. INTRODUCTION

I.2.SOCIO ECONOMIC PARAMETERS

- Population (2011) : 16 Million hbts;
- Population growth rate : 3.3%
- Urbanization rate : 25%
- GDP per capita :367 US\$;
- GDP growth rate : 7.5%
- Electricity Access :10 %

I. INTRODUCTION

1.3.ENERGY RESOURCES

Resources	Reserves/Potential
Uranium	400 000- 500 000 T
Coal	
Anou Araren	15 000 000 tonnes
Salkadamna	70 000 000 tonnes
Hydrocarbons	
Oil	700 million barrels
Gaz	14 billion m3
Hydroelectricity:	
Kandadji	230 MW
Gambou	122,5 MW
Mékrou	26 MW
Solar Radiation	5 à 7 kWh/m2/day
Wind	2,5 à 5 m/s

I. INTRODUCTION

1.4. GOVERNMENT INSTITUTIONS

Ministry of Energy and Petroleum

- Is the Competent Authority on all questions related to the peaceful uses of atomic energy;
- Develop, implement and follow up national policies and strategies on the peaceful uses of nuclear technologies;
- Define the framework of the technical Cooperation in all areas of nuclear applications between our Country and its partners;
- Implement treaties and conventions ratified by the Country especially the Non proliferation Treaty and its Safeguard Agreement and the additional Protocol, the convention on the physical protection of nuclear materials and many others.

I. INTRODUCTION

Interministerial Steering Committee on Nuclear Applications (NEPIO)

- Implement the Nuclear Power Programme (NPP) of the country;
- Advise the Government on any questions related to nuclear technology;

Members of Established Committee are composed by:

- Presidency,
- PM's Office,
- Ministry of Mines and Energy
- Ministry of Health
- Ministry of High Education, Research and Technology

I. INTRODUCTION

- Ministry of Planning,
- Ministry of Finances,
- Ministry of Security;
- Ministry of Foreign Affairs,
- Ministry of Defence ,
- Ministry of Justice,
- National Radiation Protection Centre (CNRP),
- National Research Institute of Radioisotopes;
- Electricity Utilities (NIGELEC, SONICHAR),
- Electricity Regulatory body (ARM)
- Civil Society and NGOs ;

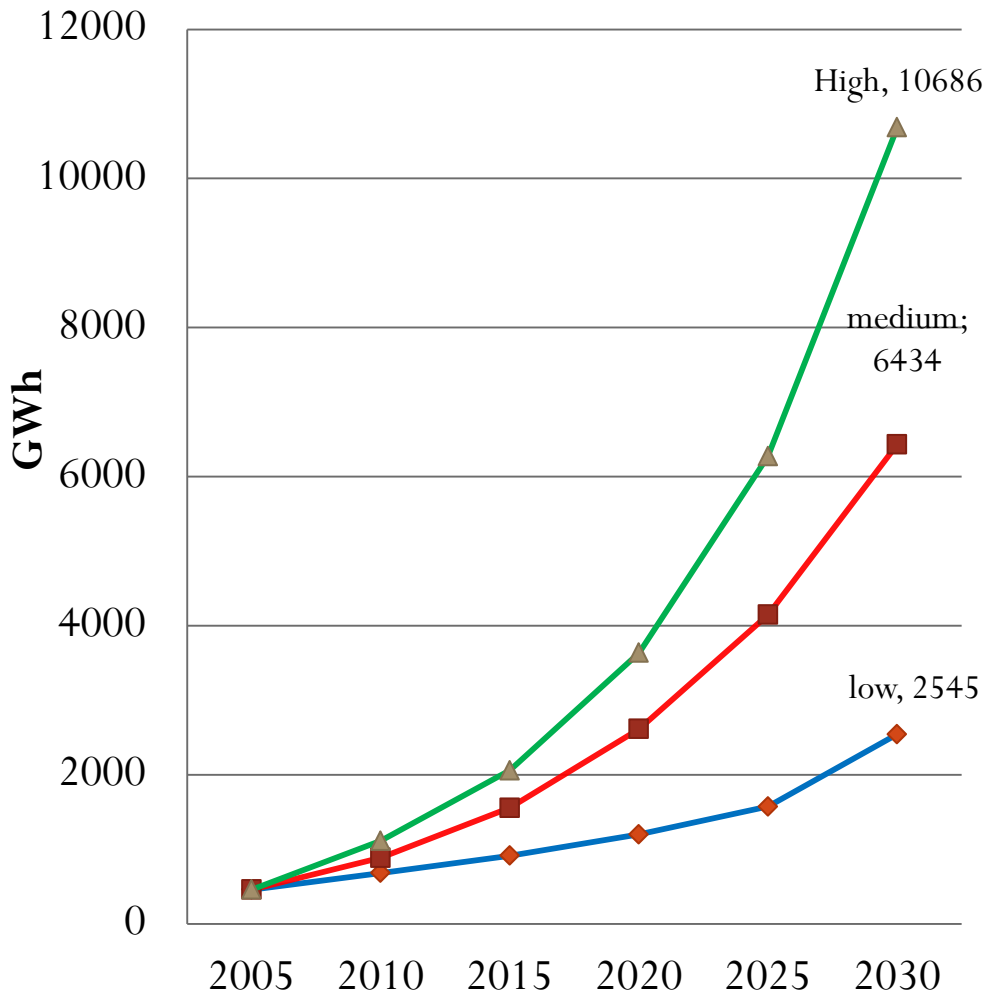
2 STATUS AND PROSPECTS OF NUCLEAR POWER PROGRAMME IN NIGER

- Energy availability is one of basic conditions for the sustainable development and social well being of any nation ,
- The energy situation of Niger is characterized by the lowest indicators in the world; the rate of access to electricity is about 10%, in rural areas more than 1%;
- In view of this situation, the country has made access to modern energy services in general and electricity in particular, one of the key elements of its energy policy
- Despite of important energy resources 70% of electricity needs of country is imported

2. STATUS AND PROSPECTS OF NUCLEAR POWER PROGRAMME IN NIGER

- Importation of electric power results in insecurity of supply, external dependence and limited access to electricity;
- Situation has been exacerbated by the energy crisis in West African Countries in 2008;
- Results of MAED and MESSAGE studies showed that Nuclear Energy should be an option in the energy mix

Electricity demand



According to country Studies using IAEA analytical tools MAED and Message, The total energy Demand will be multiplied by 4 and 7 in the reference and high scenarios. The Electricity Demand Will be multiplied by 8 and 13 for the same scenarios

2. STATUS AND PROSPECTS OF NUCLEAR POWER PROGRAMME IN NIGER

- Official Decision to embark the first phase of a Nuclear Power Programme has been taken in 2010. It consists of reviewing its institutional , legal and regulatory framework in accordance with the requirements of NPP;
- During this phase, the following activities will be performed with the assistance of IAEA ;
 - Formation of Steering Committee on the development of Nuclear applications in the country;
 - Capacity building of the regulatory Authority created in 1997;
 - Development of a regulatory framework covering all aspects of Nuclear Applications and Technologies;
 - Development and implementation of public awareness programme on requirements of NPP;
 - Ratification and implementation of all the Treaties and Conventions relevant for a NPP ;

2. STATUS AND PROSPECTS OF NUCLEAR POWER PROGRAMME IN NIGER

- Establishment of a sustainable energy development plan;
- Definition of financial arrangements for the construction of a Nuclear power Plant;
- Training of Human Resources is necessary for operation of least one unit of 1000 MW power plant;
- Site selection ;
- Development of the radioactive waste management program
- Conducting a Feasibility study

3. DRIVING FORCES AND IMPEDIMENTS FOR CONSIDERING NPP IN NIGER

• 3.1 DRIVERS

- Steadily increasing of energy demand for the socio-economic development of the country ;
- Niger has a comprehensive Safeguards Agreement and is a producer of uranium since 1971(mining, processing and exporting).
- Long experience of the country in the fuel cycle management (Uranium production started in 1971) ;
- Existence of a regulatory Authority with a long experience ;
- New Government approved strongly this programme and considers a regional approach through Regional organizations (WAEMU, ECOWAS);
- Ratification and implementation of the Non-Proliferation Treaty, Safeguards Agreement, Additional Protocol and others.

3. DRIVING FORCES AND IMPEDIMENTS FOR CONSIDERING NPP IN NIGER

- **31 IMPEDIMENTS:**
- Industrialization level of the country very low;
- Fewer training centres in Nuclear technologies in the country ;
- Lack of competent Human resources
- Lack of Financial resources;

4. NUCLEAR ENERGY IN 2030- 2050

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5 ROLE IN DEPLOYMENT OF NUCLEAR PP BY FOREIGN SUPPLIERS

6. BACK -END FUEL SERVICES FOR NATIONAL POWER PROGRAMME

7. CONCEPT OF A SUSTAINABLE NUCLEAR ENERGY SYSTEM

8. ENERGY INDEPENDENCE AND SECURITY OF SUPPLY

Energy Independence:

- Energy independence is the ability for a country to meet its energy needs by controlling the sources of production and technical evaluation of various form of energy,

Security of Energy Supply:

- Strategic plan to ensure continuity of energy supply
- To study opportunities for cross border cooperation in security of energy
- To diversify energy sources and to promote energy efficiency

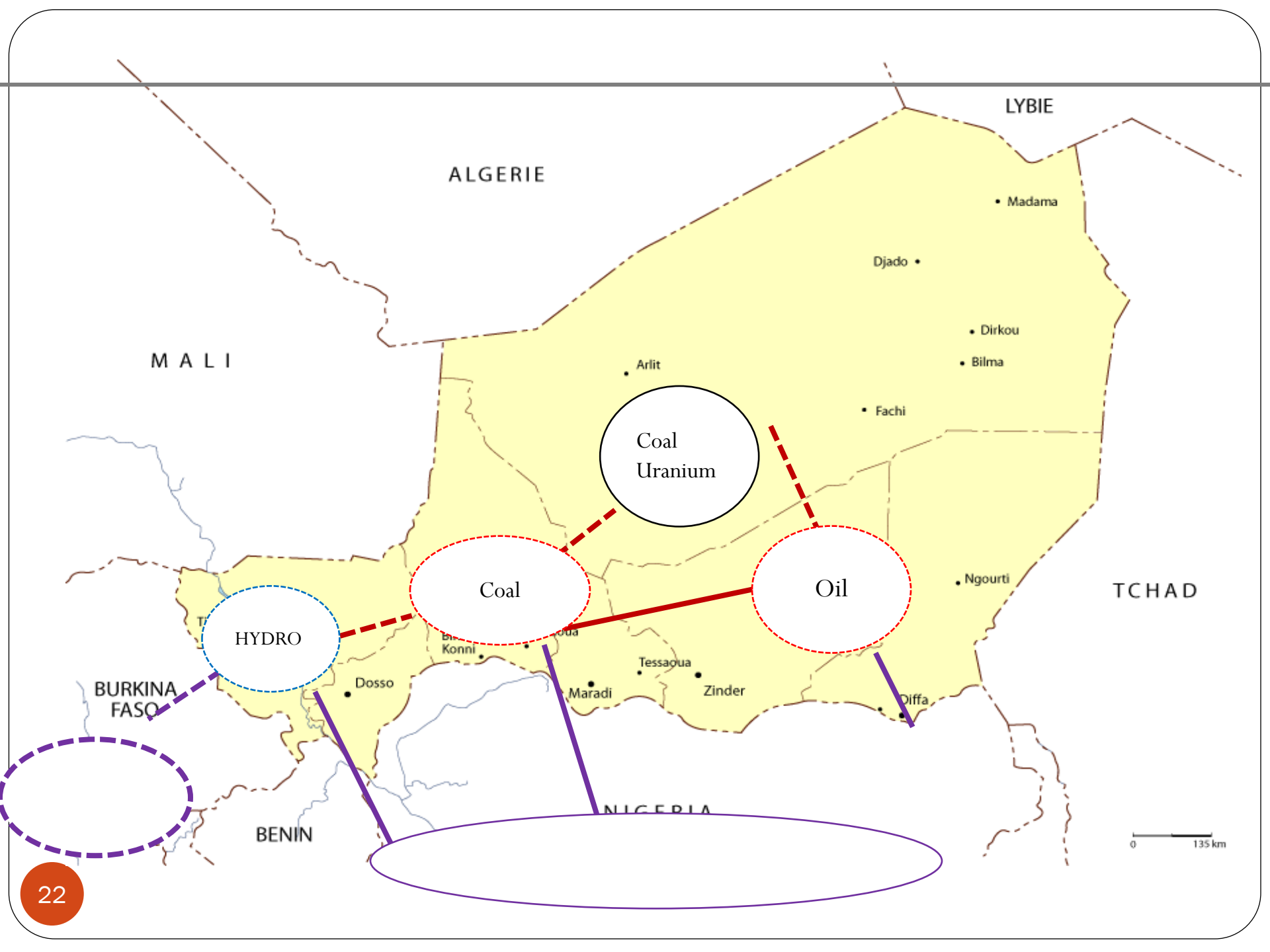
8. ENERGY INDEPENDENCE AND SECURITY OF SUPPLY

Orientations of National Energy Policy are as below:

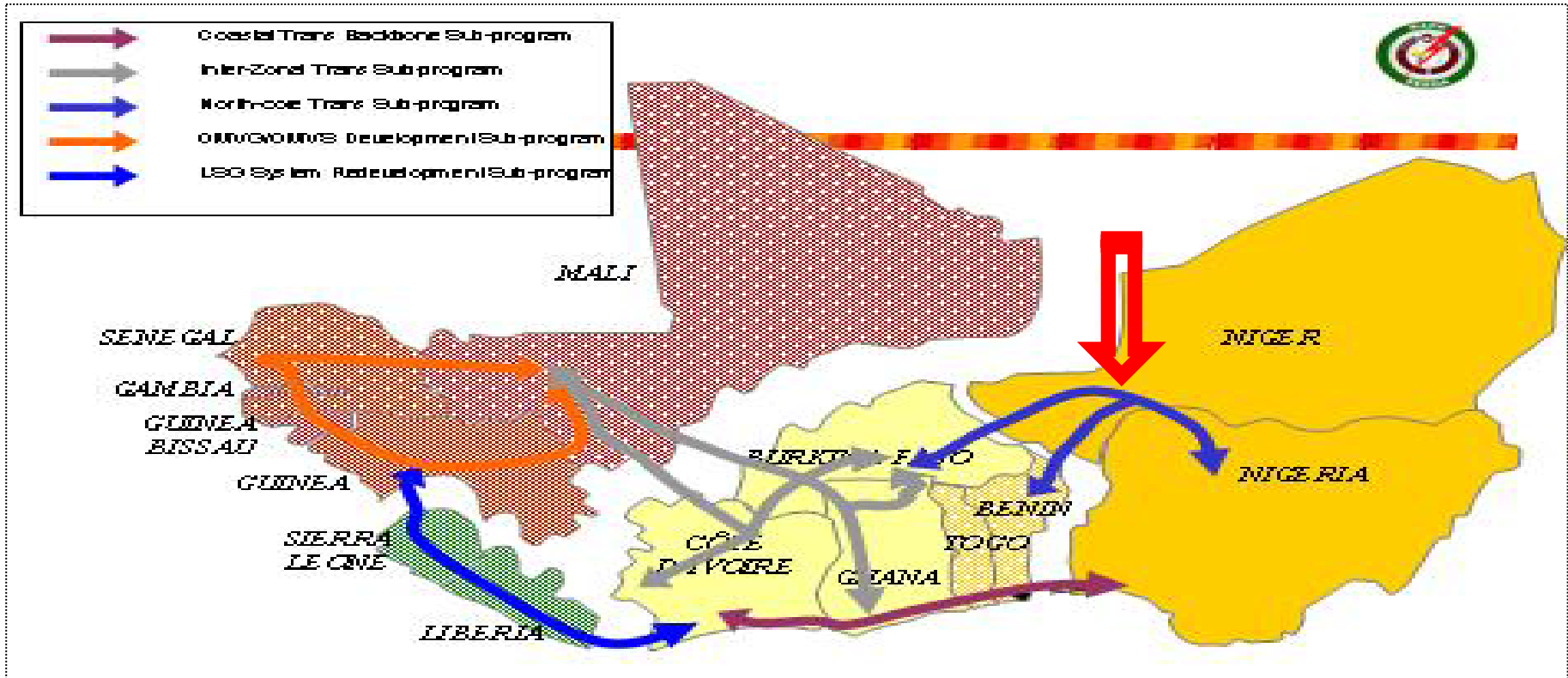
- Ensuring long-term continuity of energy supply;
- Contributing the social and territorial cohesion by ensuring universal access to energy in affordable manner;
- Promoting national energy resources;
- Promoting Energy efficiency
- Protecting the environment;
- Building Capacity of stakeholders.

• *9. COOPERATION WITH OTHER COUNTRIES IN ENERGY PROJECTS*

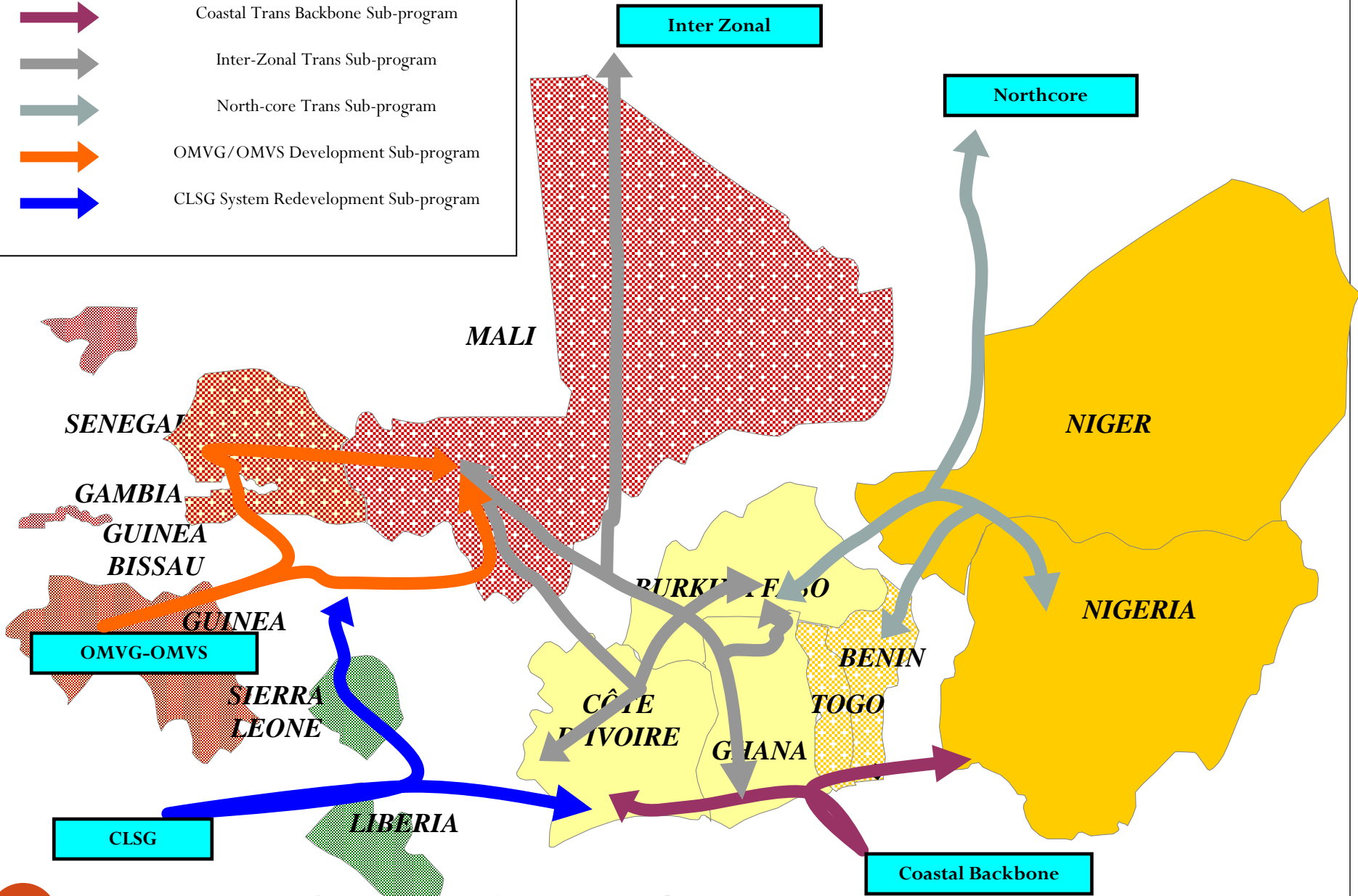
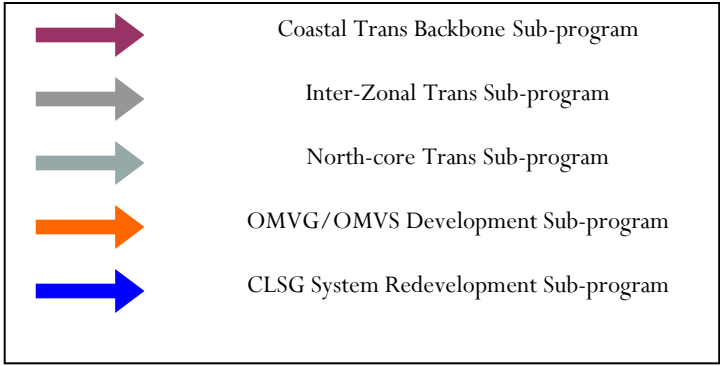
- Two interconnexion lines with Nigeria since 1976.
- 70% of electricity is imported from Nigeria,
- As a member of ECOWAS Niger participated in the WAPP program for electricity generation and transmission ;
- The major project is the construction of 330 KV transmission line from Nigeria via Niamey to Ouagadougou (Burkina Faso) and Bembereke (Benin);
- Niger is pleading for a joint Nuclear Power Programme in the ECOWAS area



(Nigéria, Niger, Burkina Faso, Bénin).



- 330 kV Birnin Kebbi (Nigéria) - Bembéréké (Bénin) – Niamey (Niger) – Ouagadougou (Burkina Faso);



Implementation Road Map

9. DRIVERS AND IMPEDIMENTS FOR COOPERATION WITH OTHER COUNTRIES

Driving forces:

- Minimize use of primary resources;
- Funding facility,
- Sharing competencies;
- Increasing quality and Security of energy supply
- Competitiveness of energy market

Impediments:

- Political instability
- Public acceptance
- Harmonization of Legislative aspects



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THANKS FOR YOUR ATTENTION