Logistic Infrastructure Scenario in Brazil

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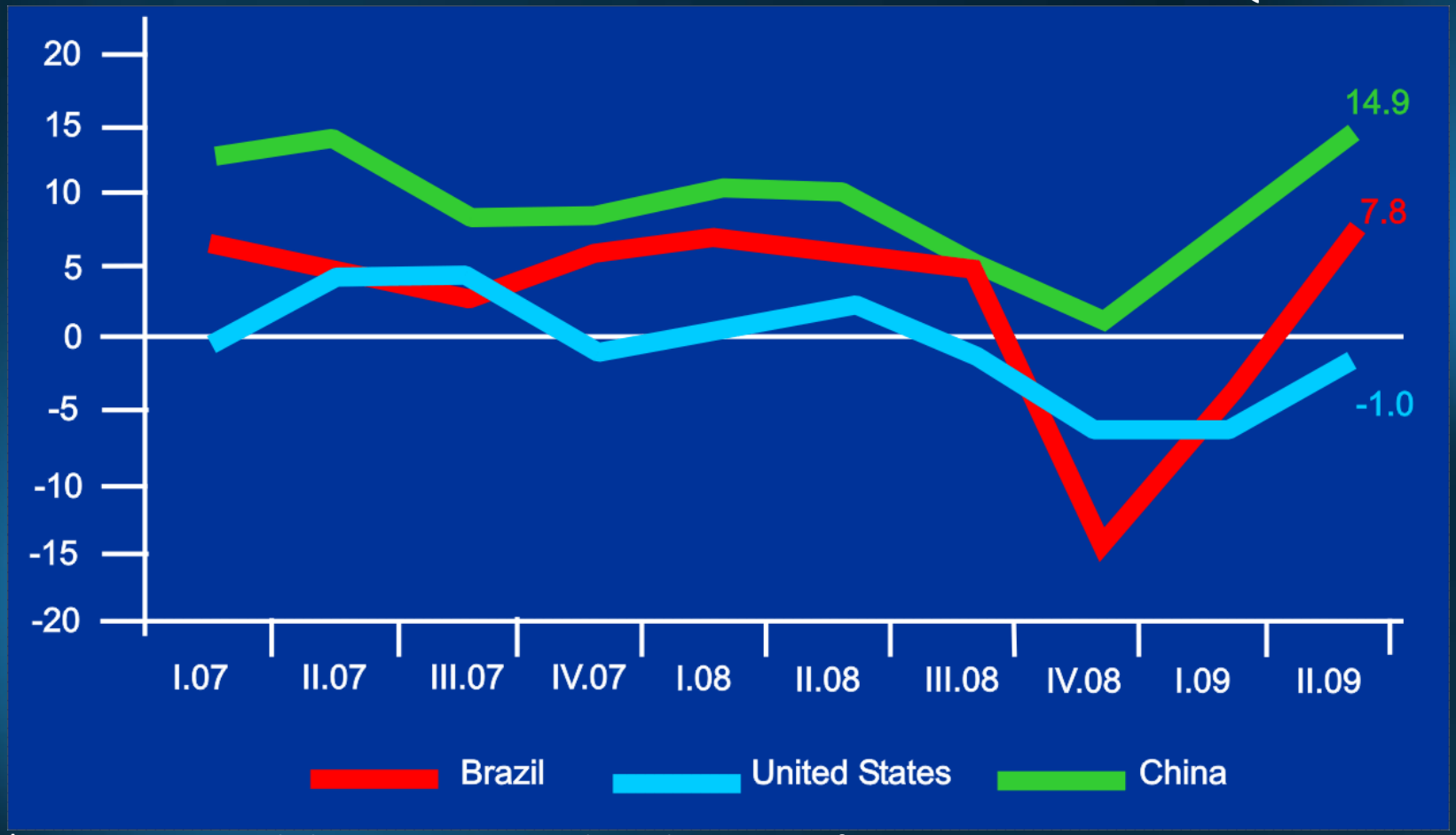
Secretary for Transportation National Policy

Minneapolis, September 20, 2011

Brazilian Economic Scenario

Positive GDP Growth for Brazil and China

Annualized Quarter data

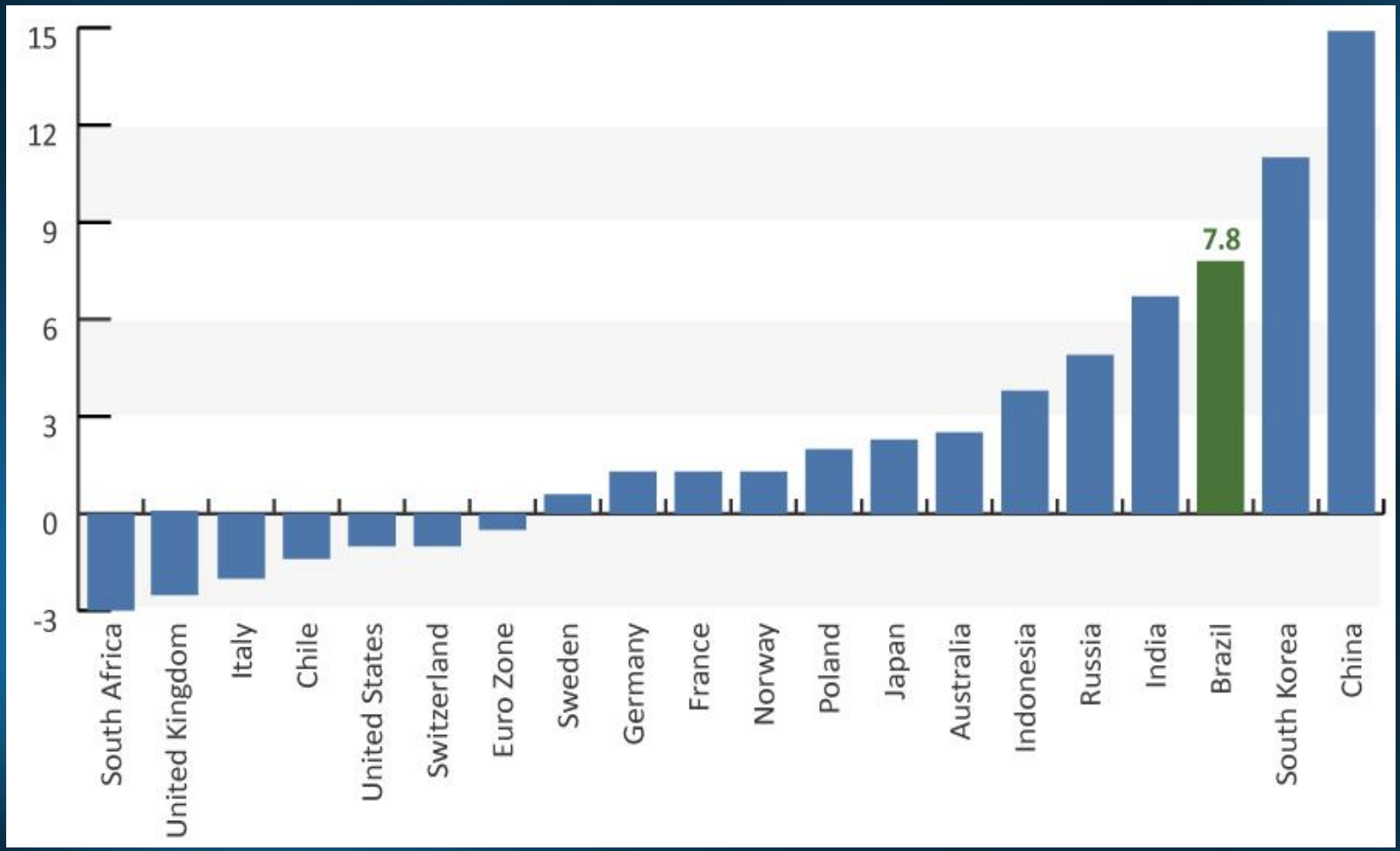


* Forecasts: USA and China - JP Morgan and Brazil - Ministry of Finance

Sources: BEA (USA), JPMorgan (China) and IBGE (Brasil) Produced by: Ministry of Finance

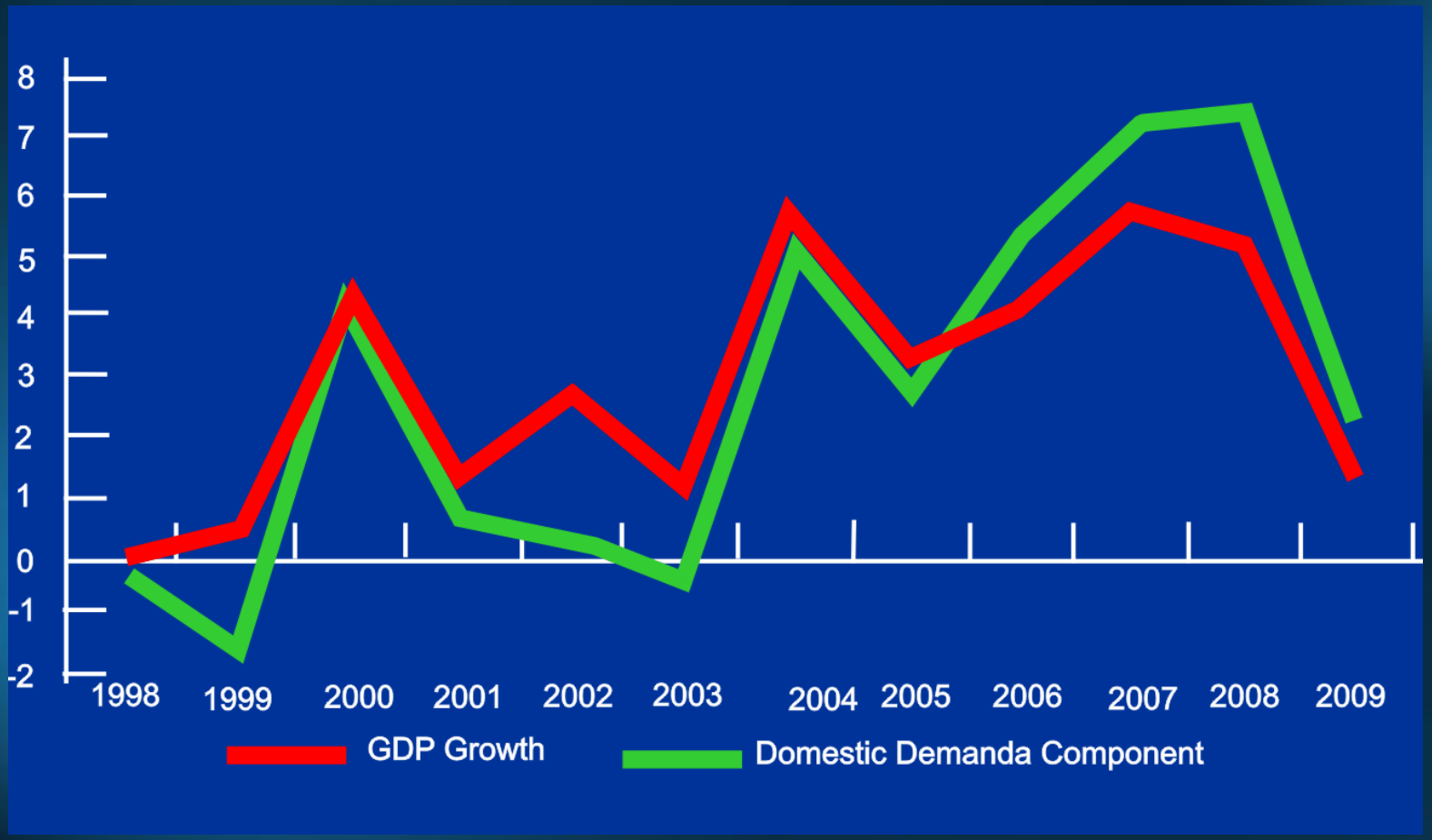
GDP Growth – International Comparison

2nd Quarter/09* - %



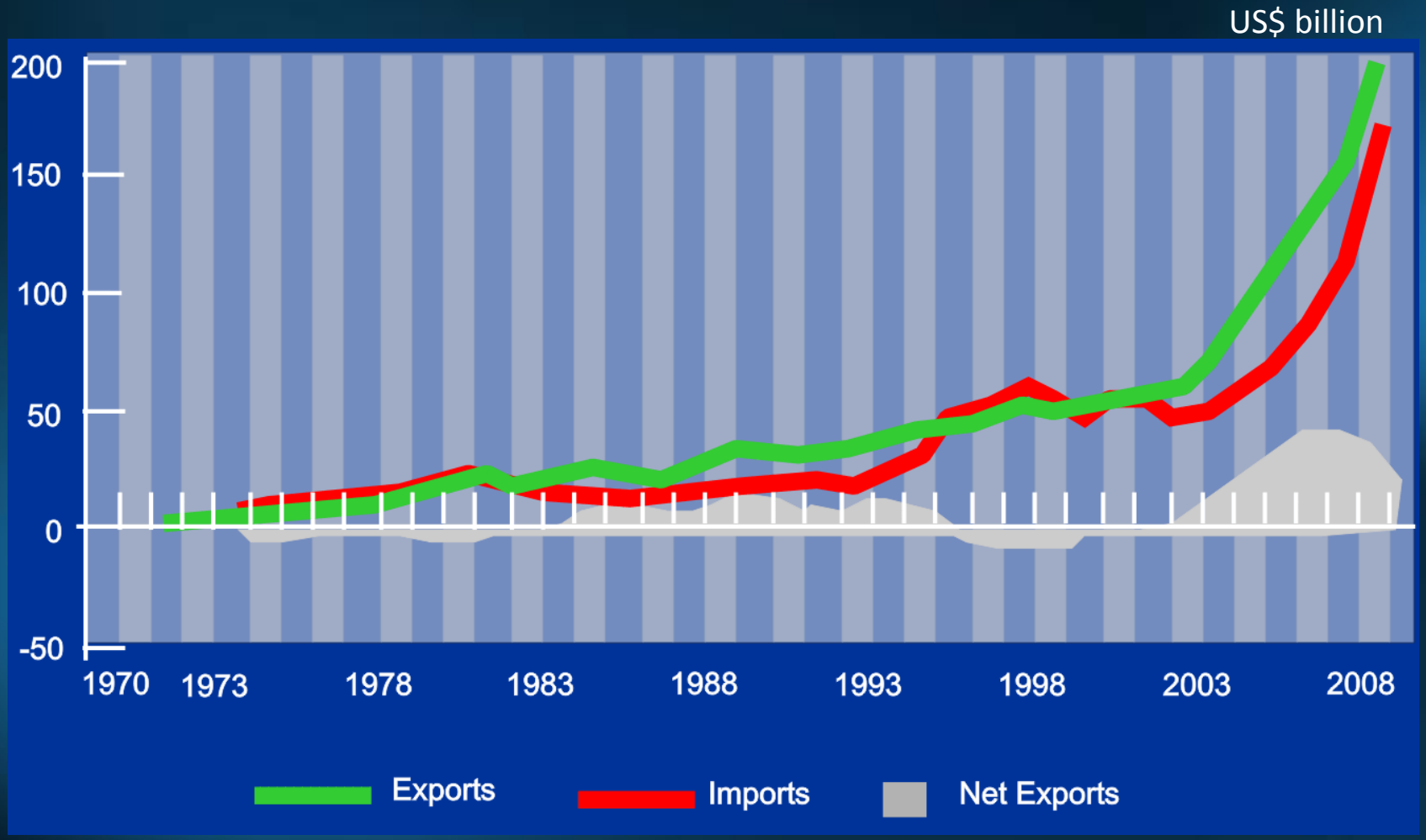
* Growth relating to the previuos quarter (1st Q 2009) , updated annually and seasonally
Source: GDW JP Morgan 09/11/2009 and IBGE for Brazil

GDP and Consumption
Change in the last 12 months - %



Source: IBGE Produced by: Ministry of Finance

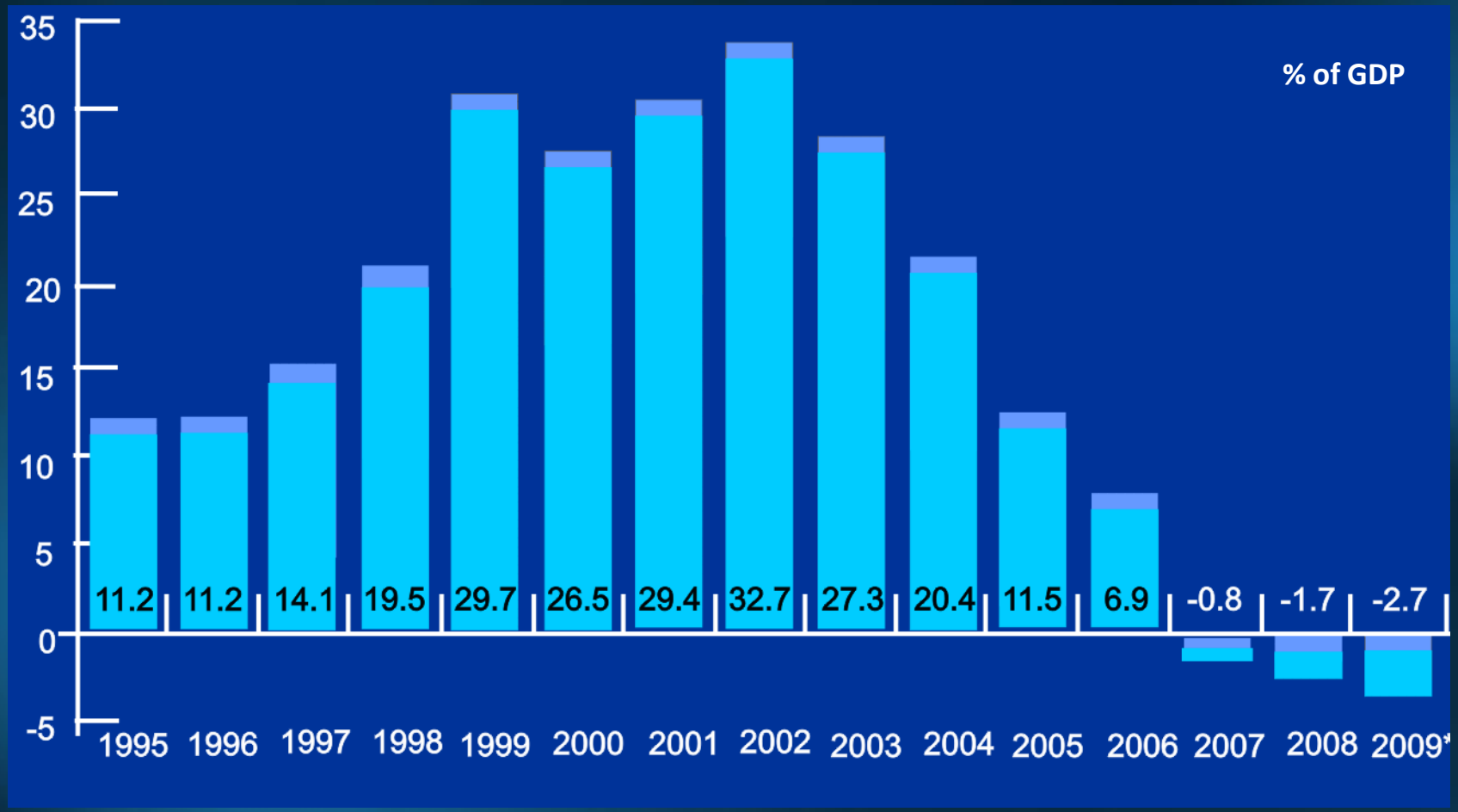
Reduction of External Vulnerability



Source: Ministry of Development, Industry and Commerce.

Produced by: Ministry of Finance

Total External Net Debt

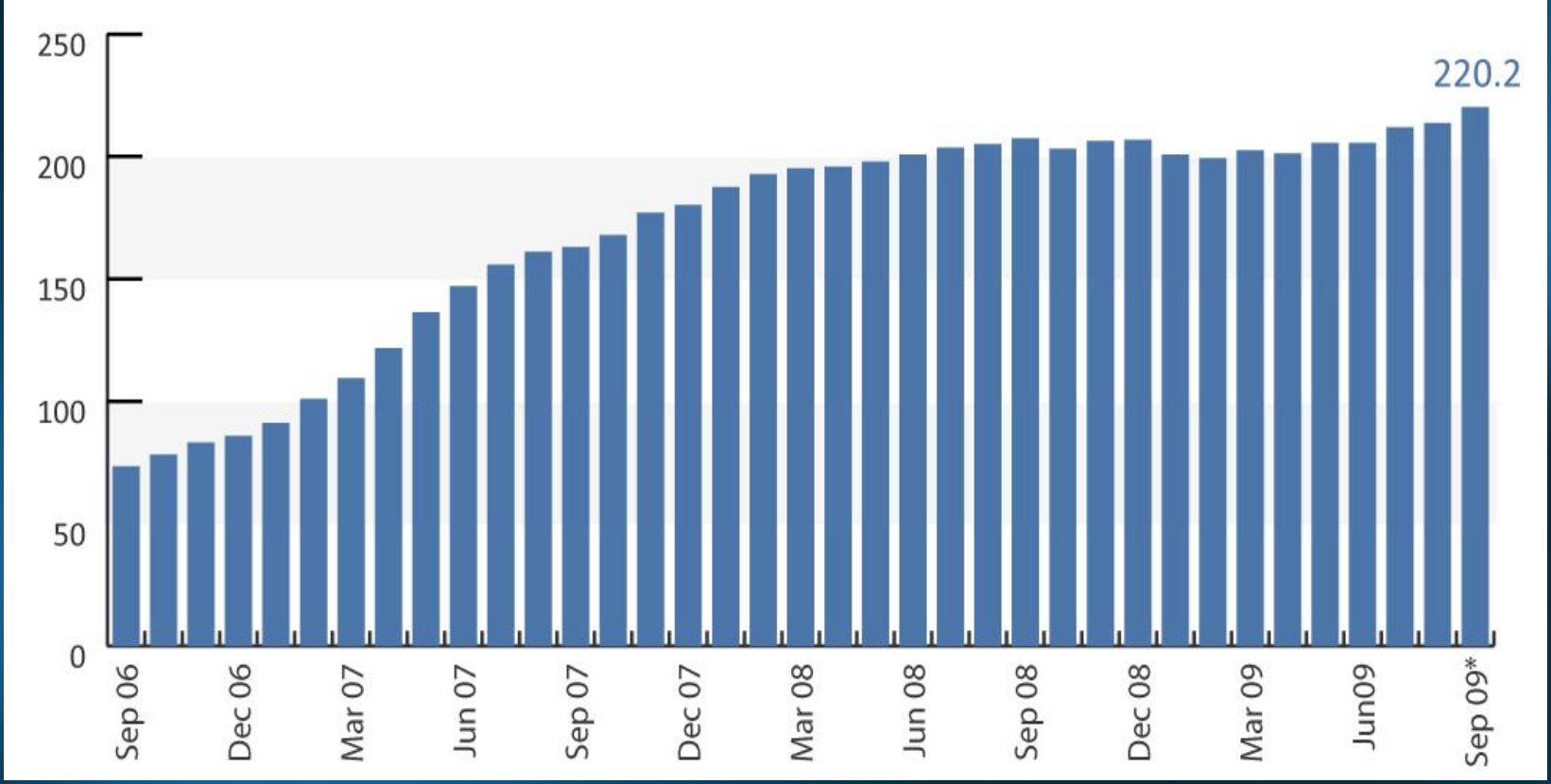


* Forecast – July 2009

Source: Central Bank of Brazil Produced by: Ministry of Finance

Foreign Exchange Reserves (International Liquidity)

US$ billion



*Position on September 8th, 2009.

Source: Central Bank of Brazil.

Prepared by: Ministry of Finance

Logistic Infrastructure

Road Network

In km

JURISDICTION	PAVED	NON PAVED	TOTAL
FEDERAL	60,469	13,604	74,073
STATE	122,889	119,429	242,318
MUNICIPAL	24,104	1,256,188	1,280,292
TOTAL NATIONAL	207,462	1,389,221	1,596,683

Rail Network

- National Rail Network 29,817 km
- Federal Rail Network under Concession 28,314 km
  - 12 concessions operated by 5 private groups and 2 state-owned companies

National Ports

- 50 public ports in Brazil – sea and river
  - 26 Federal Port Companies and National Department for Transport Infrastructure (DNIT)
  - 23 States and Municipalities
  - 1 private sector

Inland Waterways

- 28,000 km of inland waterways
- Potential utilization of over 15,000 km of new waterways
- Transport of over 25 million tons/year
  - Agricultural and mineral products, alcohol, construction material (sand, gravel), fertilizers
- Main Inland Waterways under operation

Paraná – Tietê	1,660 km
Amazonas - Madeira	4,164 km
Tapajós	1,046 km
Capim	372 km
Tocantins – Araguaia	3,040 km *
São Francisco	1,371 km
Paraguai	1,323 km
Jacuí - Taquari and Lagoa dos Patos	670 km
TOTAL	**13.646 km**

* Usable conditions

Inland Waterways system

BASIN	STATES	APROXIMATED EXTENSIONS (km)			MAIN RIVERS
		NAVIGABLE	POTENTIAL	TOTAL*	
AMAZÔNICA	AM, PA, AC, RO, RR, e AP	18,300	723.5	19,023	Amazonas, Solimões, Negro, Branco, Madeira, Purus, Juruá, Tapajós, Teles Pires, Juruena, Mamoré, e Guaporé
NORDESTE	MA e PI	1,740	2,975	4,715	Mearim, Pindaré, Itapecuru, Parnaíba e Balsas
TOCANTINS/ARAGUAIA	TO, MA e GO	2,200	1,300	3,500	Tocantins, Araguaiae Mortes
SÃO FRANCISCO	MG, BA, PE e SE	1,400	2,700	4,100	São Francisco, Grande e Corrente
LESTE	MG, ES e RJ	-	1,094	1,094	Doce, Paraíba do Sul e Jequitinhonha
TIETÊ/PARANÁ	SP, PR e SC	1,900	2,900	4,800	Paraná, Tietê, Paranaíba, Grande, Ivaí e Ivinheima
PARAGUAI	MT, MS e PR	1,280	1,815	3,095	Paraguai, Cuiabá, Miranda, São Lourenço, Taquari e Iaurú
SUL	RS	600	700	1,300	Jacuí, Taquarí,Lagoa dos Patos e Lagoa Mirim
URUGUAI	RS e SC	-	1,200	1,200	Uruguai e Ibicuí
TOTAL		27,420	15,407.5	42,827.5	

* Not necessarily continuous stretches.

Ro-Ro Terminal in Manaus
(State of Amazonas)

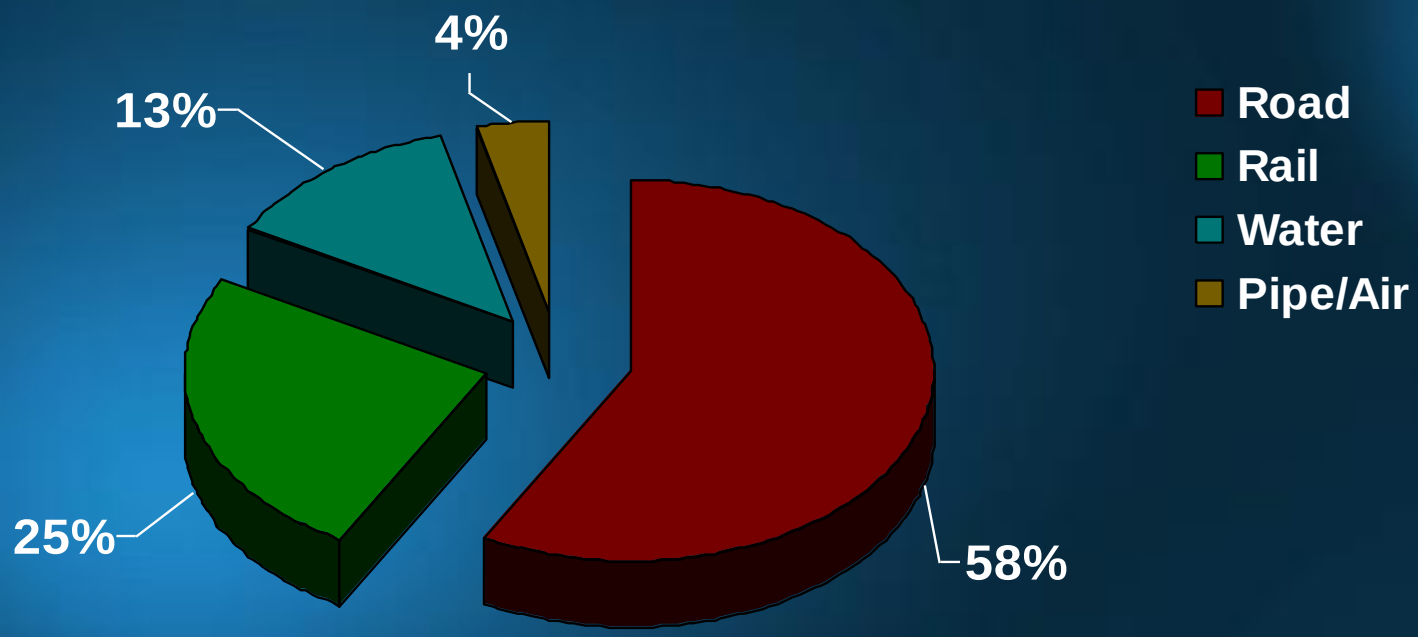
Convoy on a Tietê River Canal (State of São Paulo)

Construction of Tucuruí Locks
(State of Para)

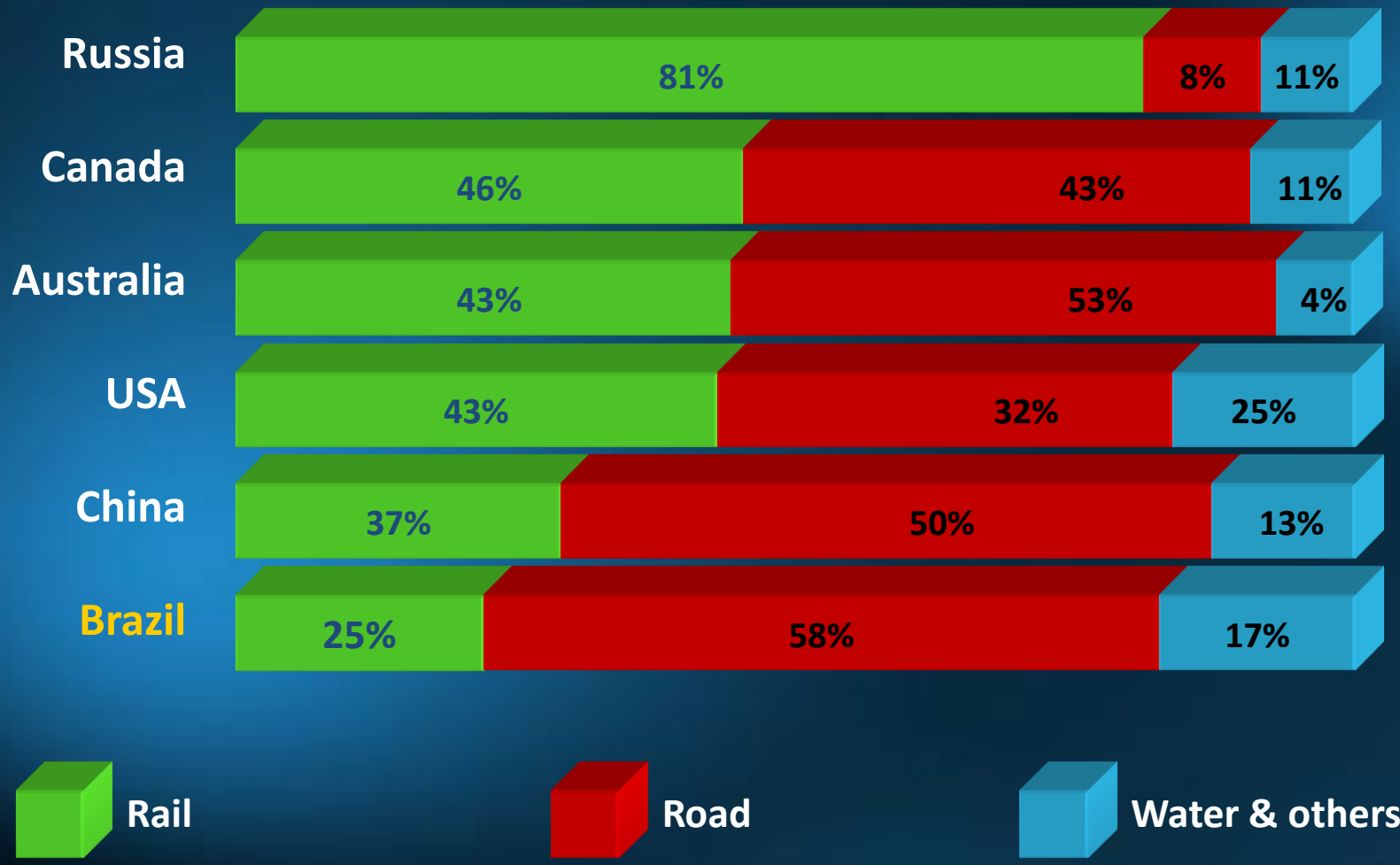
Convoy on the Madeira River
(States of Amazonas & Rondônia)

Transport Policy and Planning

The transport matrix is unbalanced considering the size of Brazil



which is proved as compared with similar-size countries.



To organize such scenario and recover the transport sector, the Ministry of Transport has developed the National Plan for Logistics and Transportation (PNLT)

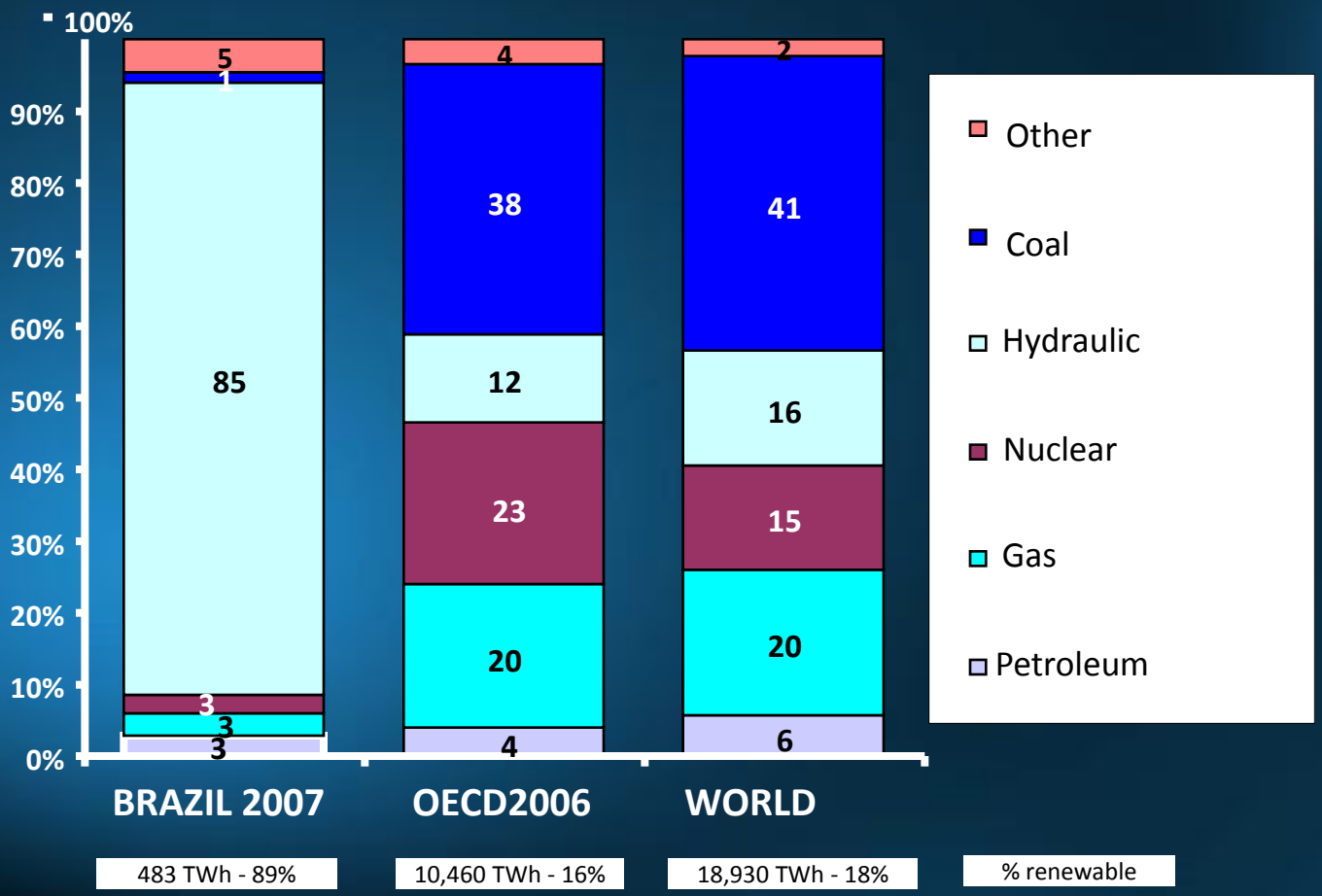
- An instrument for strategic organization with an integrated view on the territory and development.
- Transport as an agent to induce and facilitate development.
- A more balanced Brazilian transport matrix with a significant participation of rail and water modes, which are more efficient in terms of economy and energy consumption, with less emission of CO_2 and NOx.

PNLT indicates ways to change the transport matrix

- Consolidation of a new Brazilian rail network (Law 11772/2008) with the implementation of 11,800 km of new rail lines, with 10,700 km of large-gauge tracks.
- New railways will serve areas of agricultural & mineral new frontiers.
- This new basic railway system prepares the Country for a new economic growth cycle to meet the domestic demand increase and integration with exporting ports.
- Gradual transfer of general cargo from roads to **railways, inland waterways, and coastal shipping.**

The Brazilian power generation matrix is clean, based on hydro-electric plants. It is needed to make this feature compatible with navigation needs

Power Generation Matrix – Brazil and the World (%)

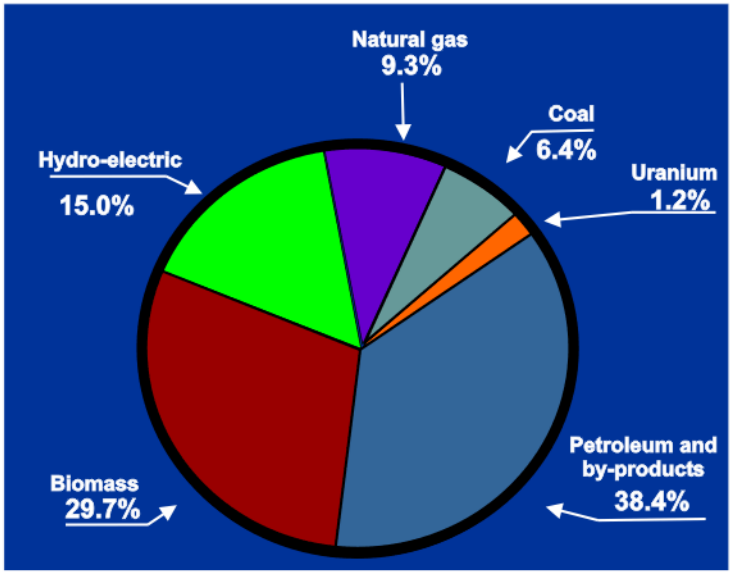


Source: MME

Power Generation Matrix in Brazil is markedly renewable

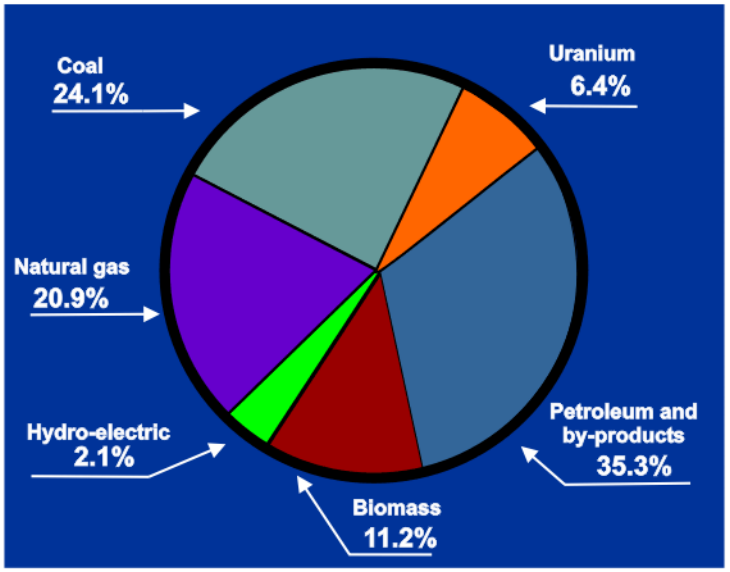
ENERGY MATRIX

BRAZIL



44.7% renewable

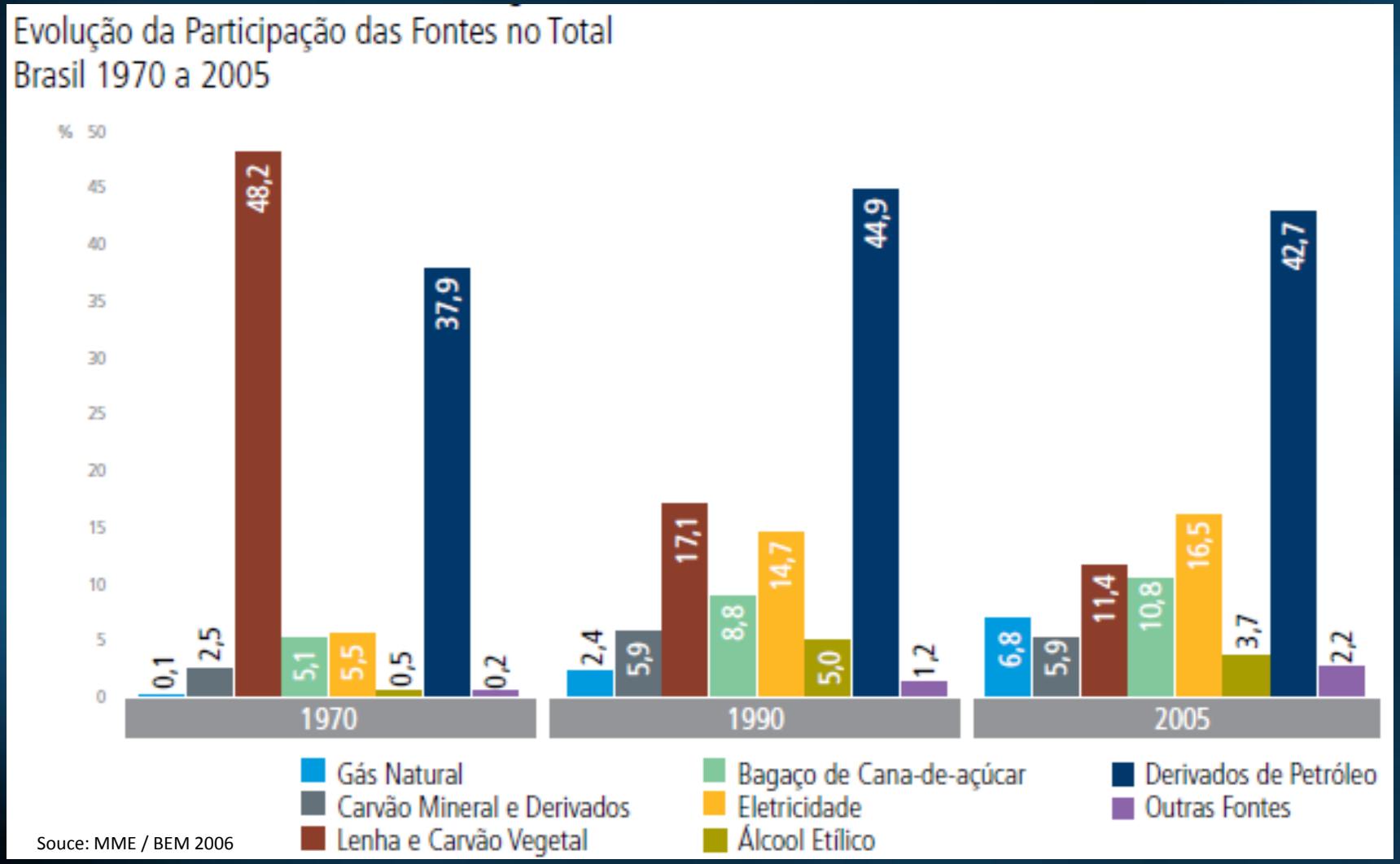
WORLD



13.3% renewable

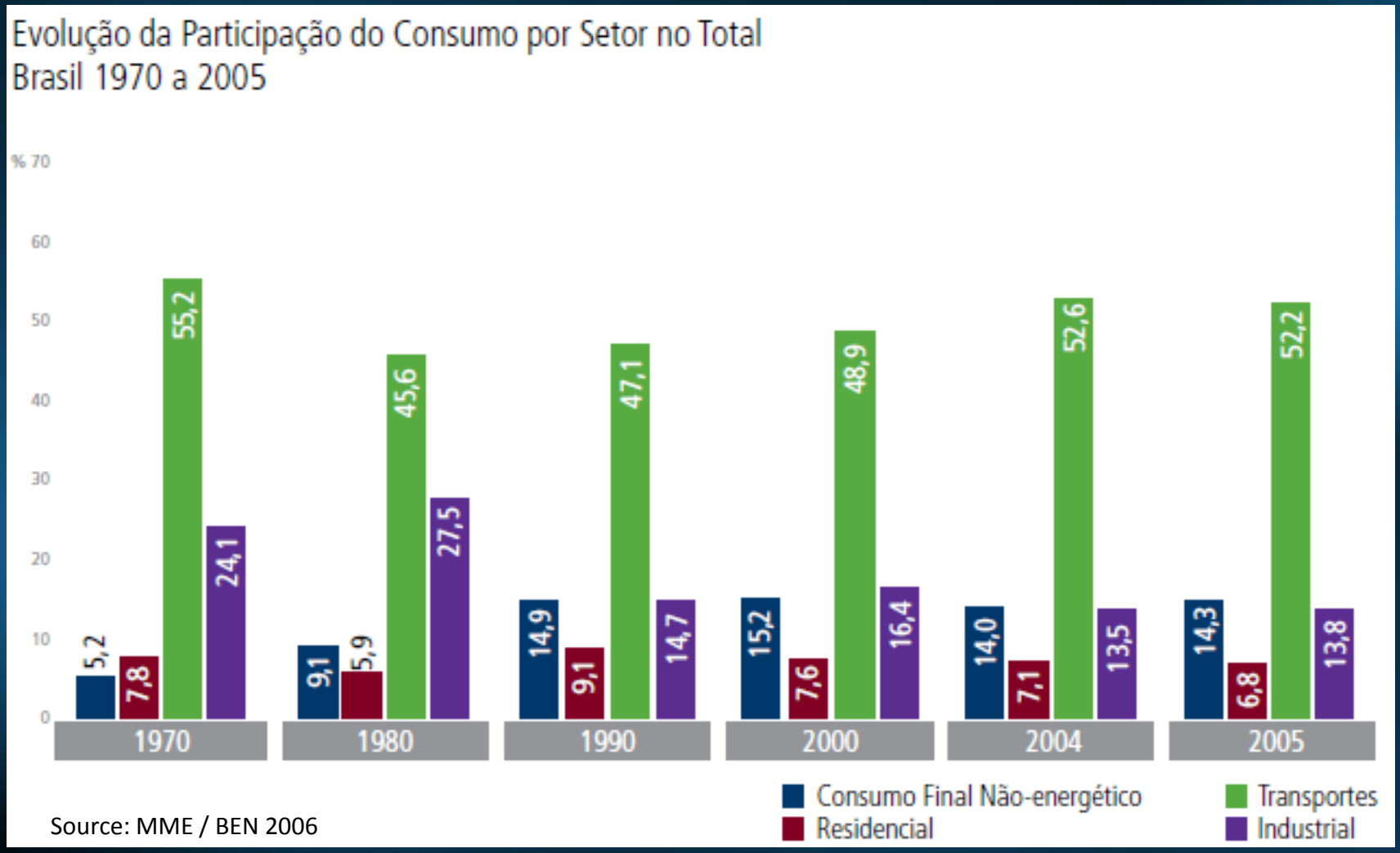
Source: MME / BEN (2006)

Energy consumption all sources (%)



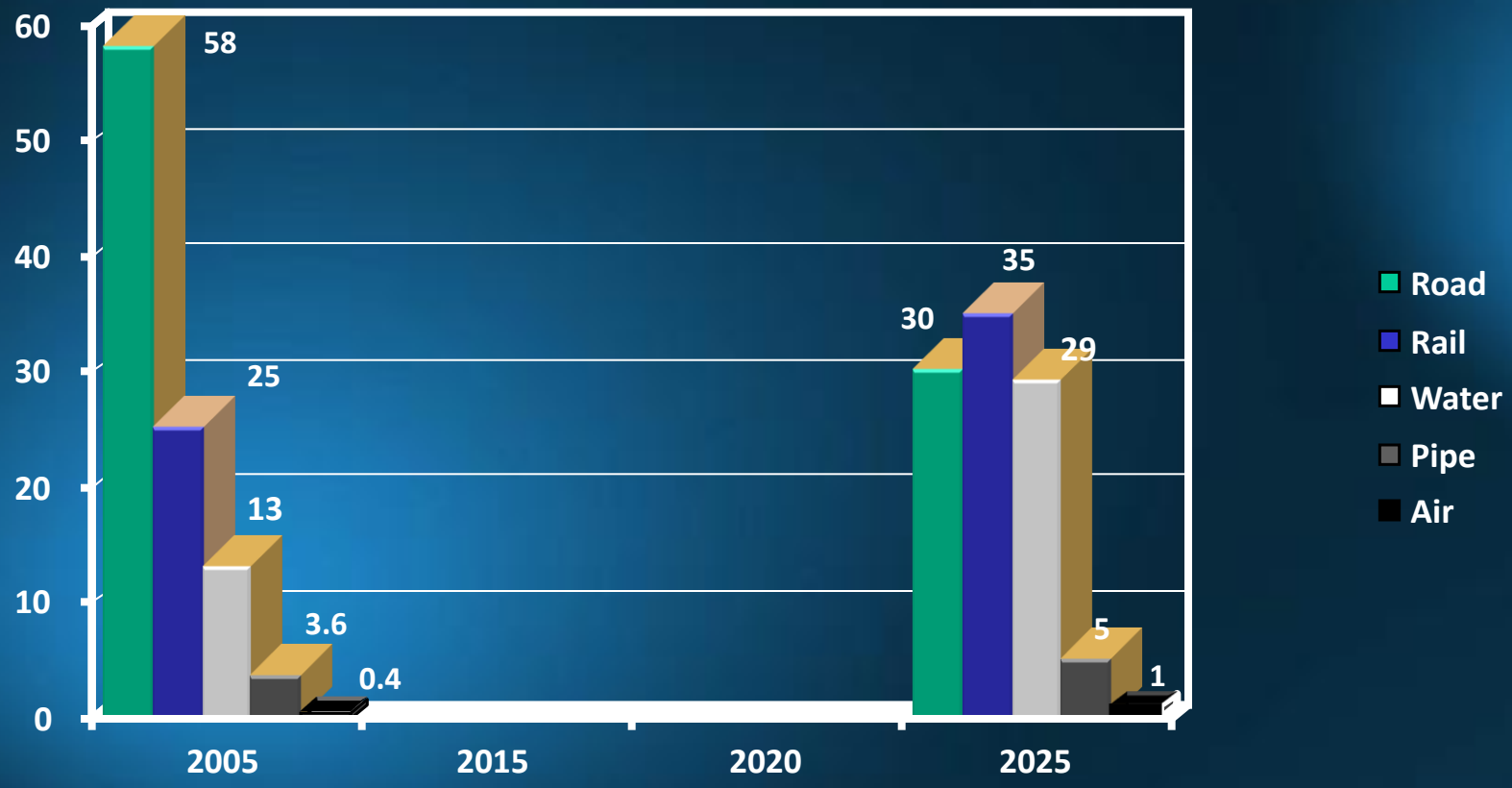
Souce: MME / BEM 2006

Oil consumption by sectors (%)



Source: MME / BEN 2006

Transport Matrix - Present and Future



Source: PNLT Processing, considering energy consumption

Benefits from the Transport Matrix change 2005 to 2023/2025

(Transport production grows from 851 to 1,510 bi TKU)

- 38% of energy efficiency increase
- 41% of fuel consumption reduction
- 32% of CO_2 emission reduction
- 39% of NO_x emission reduction

PAC
Growth Acceleration Program

Background

- Brazil has faced a long period of low investment in logistic infrastructure
- Better economic conditions have allowed:
  - Rehabilitation of public investment capability
  - Favorable scenario for partnerships with the private sector
    - Road Concessions
    - Railroad Concessions

PAC

- **After two decades, it is the first initiative to accomplish a significant program of investments in transportation**
- **Public investments selected from the PNLT**
  - Projects with strong potential for generating economic & social return
  - Synergy among projects
  - Rehabilitation of the existing infrastructure
  - New projects and conclusion of projects under way

Main PAC's Projects

- **Highways**
  - Construction of new highways 2,989 km
  - Expansion of the existing road capacity 1,926 km
  - Rehabilitation of the existing road network 53,585 km
- **Railways**
  - Rail network capacity increase
  - Expansion of the rail network (12,000 km): 2,700 under construction; 1,500 to be built; 5,300 under studies & design; 2,500 under analysis
- **Inland Waterways**
  - Construction of inland waterway terminals in Amazonia
  - Construction of locks
- **Incentive to Shipbuilding (Financing)**
  - Construction of ocean-going, coastal, maritime aid and river vessels (384 vessels, 103 of which finished)
  - Construction and modernization of 8 shipyards

Partnerships with the Private Sector

Road Concessions

1st phase of the Federal Highway Concession Program

1,482 km in 3 States: Rio de Janeiro, São Paulo and Rio Grande do Sul (Concluded)

2nd phase of the Federal Highway Concession Program

3,228 km in 6 States: Bahia, Minas Gerais, Rio de Janeiro, São Paulo, Paraná and Santa Catarina (Concluded)

3rd phase of Federal Highway Concession Program

2,230 km in 5 States: Minas Gerais, Espírito Santo, Goiás, Federal District and Santa Catarina

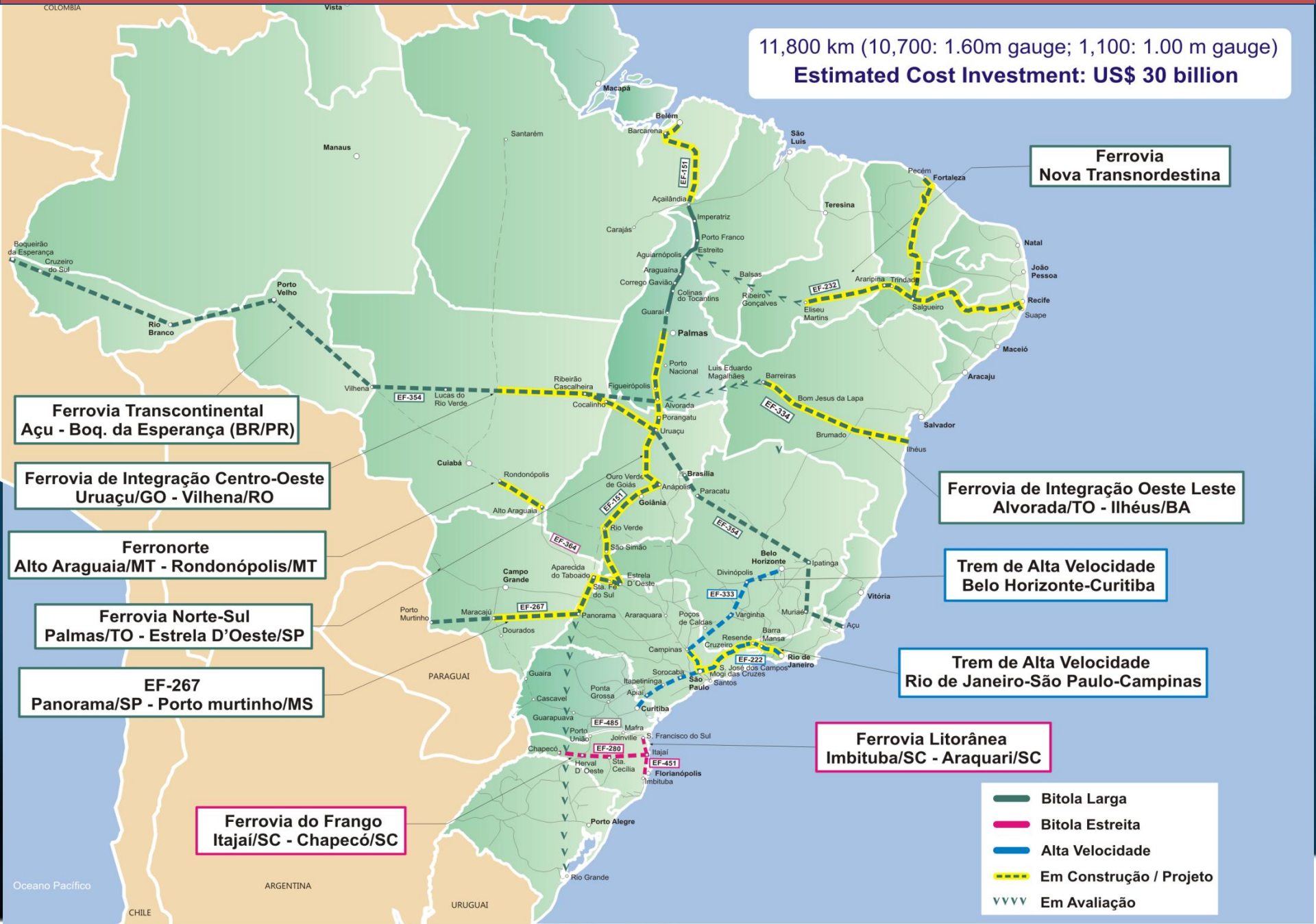
Bidding in 2010

FEDERAL HIGHWAY CONCESSION PROGRAM

Railway Program

- Public investment together with private funds from the entrepreneur
  - North-South Railway
    - 719 km – Açailândia/MA – Palmas/TO – sub-concession concluded in Dec. 2007
    - 1,535 km – Palmas/TO – Estrela d'Oeste/SP – under way: construction works, section Palmas/Anápolis (855 km); and studies relating the section Anápolis/Estrela d'Oeste (680 km)
  - West-East Integration Railway
    - 1,490 km – Figueirópolis-TO / Ilhéus-BA
    - Studies and project under way

Projects for Railways Expansion in Brazil



High Speed Train
Rio de Janeiro – São Paulo – Campinas

- Extension: 511 km
- Serves the most populous and economically developed region in Brazil
- Studies on demand, alignment, geology, operation and economic-financial modeling are concluded

- Call for bidding and auction for technology: 1st semester of 2012
  - Transfer of technology is mandatory

    The winner will be responsible for :
    - final engineering design
    - maintenance
    - operation

- Call for bidding and auction for the High Speed Train:
  - Construction

High Speed Train
Rio de Janeiro - São Paulo - Campinas

PROPOSED STATIONS

CAMPINAS	VIRACOPOS	SÃO PAULO	AEROPORTO DE GUARULHOS	SÃO JOSÉ DOS CAMPOS	BARRA MANSA / VOLTA REDONDA	AEROPORTO GALEÃO	RIO DE JANEIRO / BARÃO DE MAUÁ
1	2	3	4	5	6	7	8
Km 0,53	Km 22,9	Km 98,9	Km 120,5	Km 182,0	Km 391,6	Km 494,5	Km 509,5

STATION LOCATIONS

Major Directives from the Ministry of Cities for Urban Mobility

Implement corridors and transport equipments for all major cities with more than 300 thousand inhabitants, state capitals and metropolitan regions, focusing bus and rail systems, including 60% expansion in the existing metro network

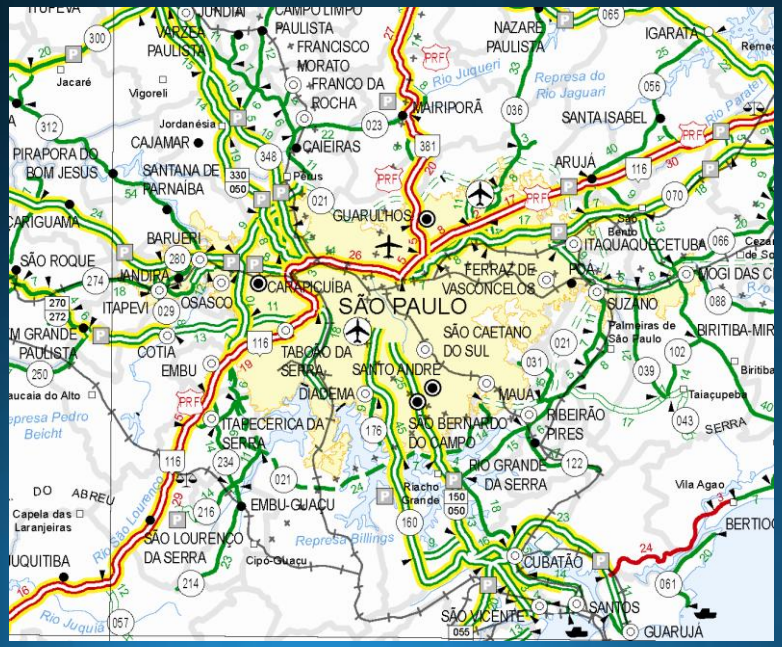
PAC mobilility goals:

- Existing network: 215,7 km
- Expansion of 133,5 km up to 2022
- Metro network (São Paulo, Rio, Recife, B. Horizonte, Salvador, Fortaleza, Brasília)
- Rail & VLT (São Paulo, Rio, P. Alegre, Natal, Salvador, J. Pessoa, Recife, Fortaleza, Maceió, N. Hamburgo, Curitiba)

Ministry of Transportation

GOVERNO FEDERAL
BRASIL
PAÍS RICO É PAÍS SEM POBREZA

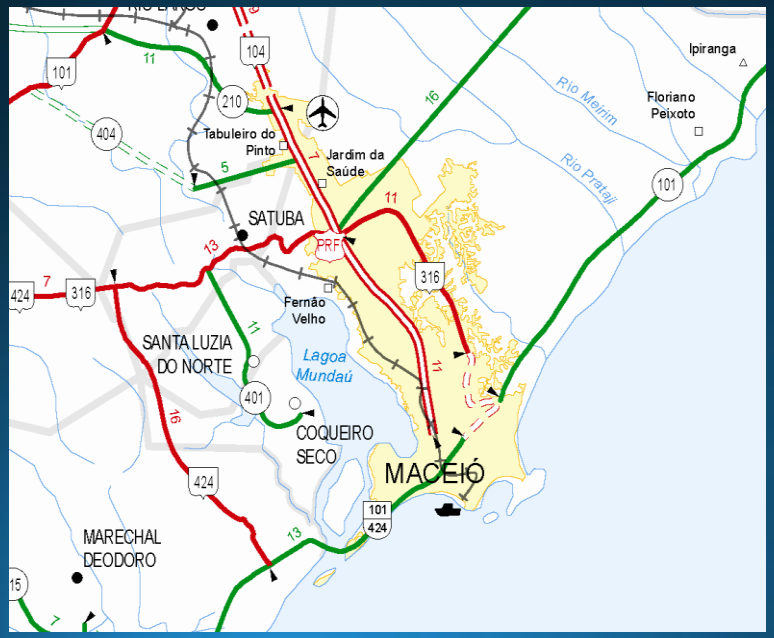
São Paulo Metro



- 4 existing lines totalling 62.3 km
- 3,500,000 pax/day
- 12 km expansion (private operation)
- 11 km of new line (5) in 2015
- 24 km of 2 monorail lines in 2014
- Expansion Expresso Tiradentes - 23 km monorail
- Expansion of 6 km Orange line subway.
- Basic Design 12 km Monorail or VLT:
  S. Bernardo-São Paulo

CPTM VLT

- 6 existing lines totalling 260.8 km
- 2,150,000 pax/day
- New line (13) with 20 km in 2025
- 84 new trains (8 cars each) in 2014
- Design Capacity: 4,100,000 pax/day(3 min headway)
- PPP operation under analysis



Maceió Diesel VLT

- 1 existing line totalling 32.1 km
- 6,000 pax/day

- System is under improvement with VLT rolling stock

Salvador Surface Rail

- 1 existing line totalling 17 km
- 12,000 pax/day
- Under improvement
- Public operation

Salvador Metro

- 1 existing line totalling 6 km
- Expansion to 12 km in 2011
- 200,000 pax/day forecast
- Public operation

Fortaleza Metro

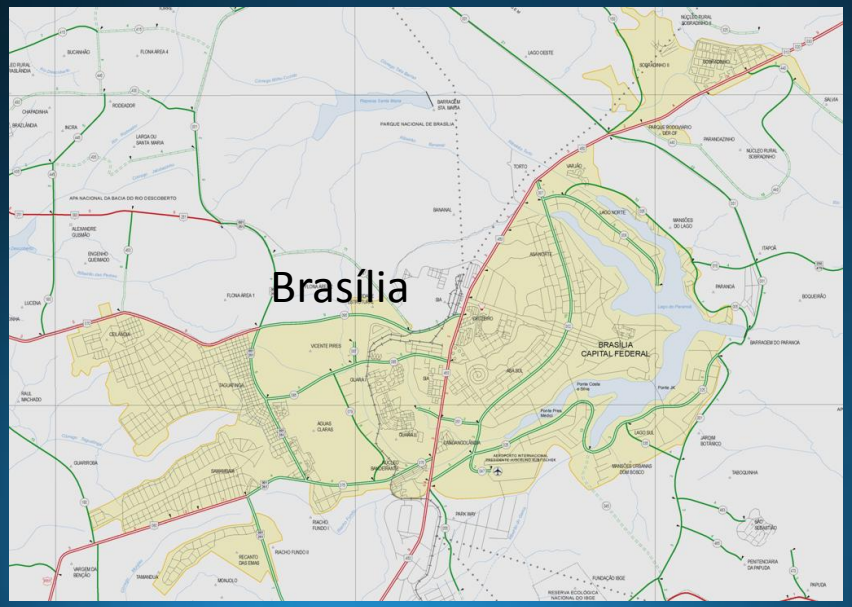
South Line (under construction)

- 1 line totalling 17 km
- 190,000 pax/day
- Operation in 2011
- 2 lots of 10 trains each (with 4 cars)

Fortaleza Diesel VLT

West line

- 1 existing line totalling 21 km
- 8,000 pax/day
- May be expanded for integration with the metro system
- State public operation

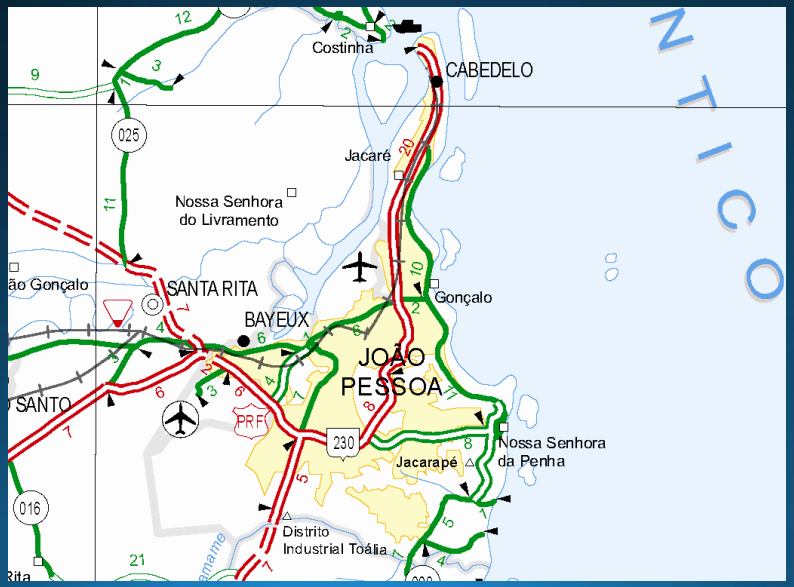


Brasília Metro

- 1 existing line totalling 40.3 km
- 120,000 pax/day
- Expansion of Rolim stock for 190,000 pax/day
- Public Operation

Belo Horizonte Metro - CBTU

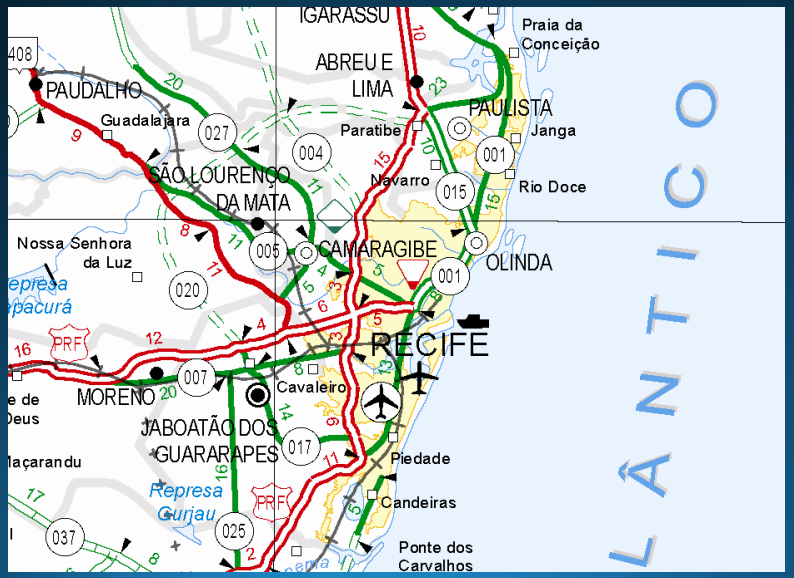
- 1 existing line totalling 2.2 km
- 170,000 pax/day
- Capacity forecast: 240,000 pax/day
- Need for 10 new trains (4 cars each)
- Final engineering design for Lines 2 and 3 totalling 33.8 km



João Pessoa VLT - CBTU

- 1 existing line totalling 30 KM
- 11,000 pax/day

- Design for improvement under analysis

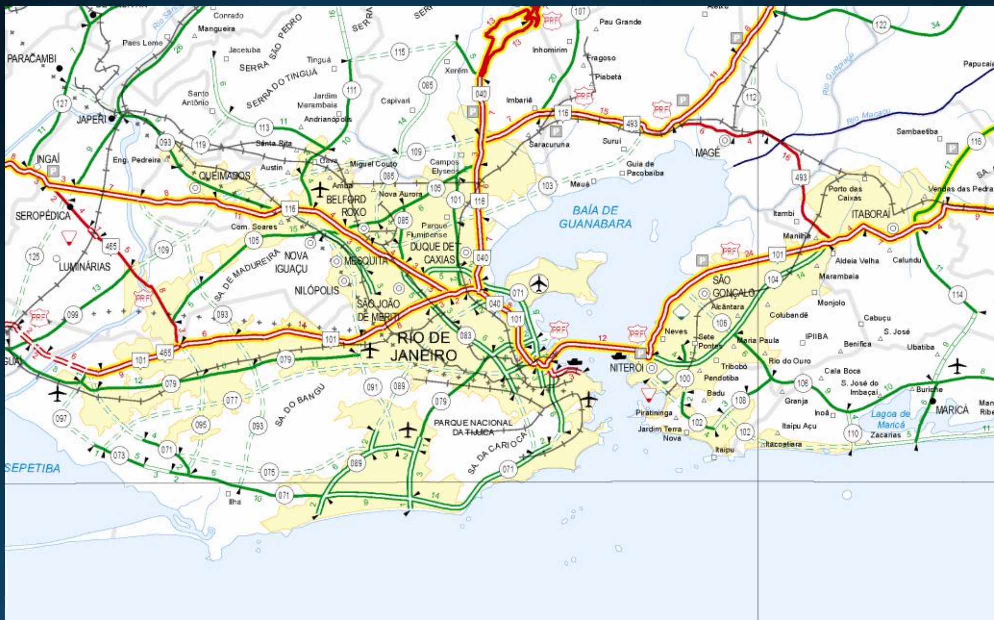


Recife Metro - CBTU

- 2 existing lines totalling 39.7 km
- 220,000 pax/day
- 15 TUE (eletric train unit)
- Public operation

Recife VLT
South Line

- 2 existing lines totalling 26.1 km
- 6,000 pax/day
- Under improvement (connecting to SUAPE Industrial Port)
- PAC I



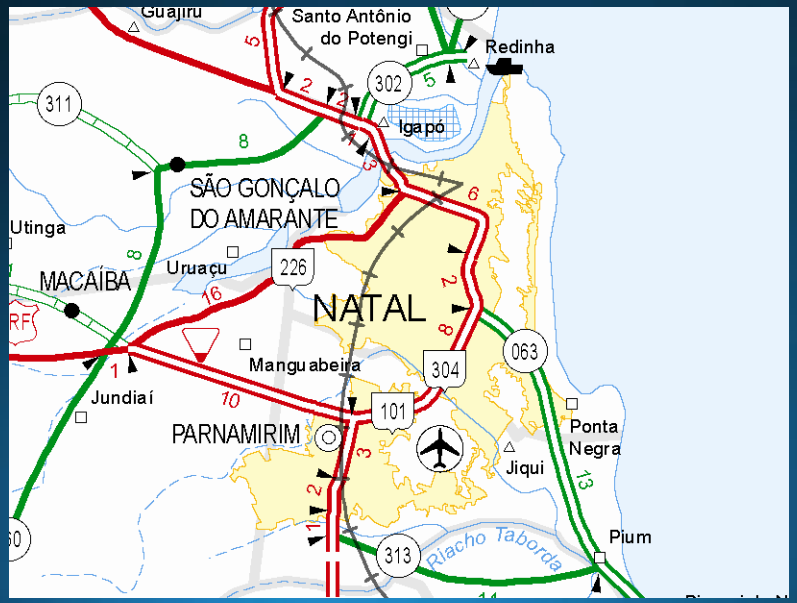
Rio de Janeiro Metro

- 2 existing lines totalling 35.6 km
- 550,000 pax/day
- Line 4 under construction with14 km (Ipanema - Barra da Tijuca)
- Demand forecast 250,000 pax/day
- Prospective construction of Line 3 (Niterói -São Gonçalo) for Olympic Games 2016

Rio de Janeiro Metro

SUPERVIA

- 5 existing lines totalling 225 km
- 500,000 pax/day
- 1,100,000 pax/day demand forecast
- Lines and Stations Improvement with 90 addition TUE (eletric train units) to attend Olympic Games 2016



Natal Diesel VLT

- 2 existing lines totalling 56.2 km
- 7,000 pax/day
- Future improvement under analysis

Porto Alegre VLT

TRENSURB

- 1 existing line totalling 33.8 km
- 160,000 pax/day
- Expansion of 9 km in 2011 with 8 new TUE (6 cars each)
- Demand forecast: 200,000 pax/day

Passengers traffic on railway cargo network

- **Low demand cargo lines**:

  Feasibility studies are financed by the Ministry of Transport and implementation and operation by private enterprises, basically for tourism sector

  (14 prospective services throughout the Country)

- **Regular demand cargo lines**:

  Passengers traffic operated in non priority basis

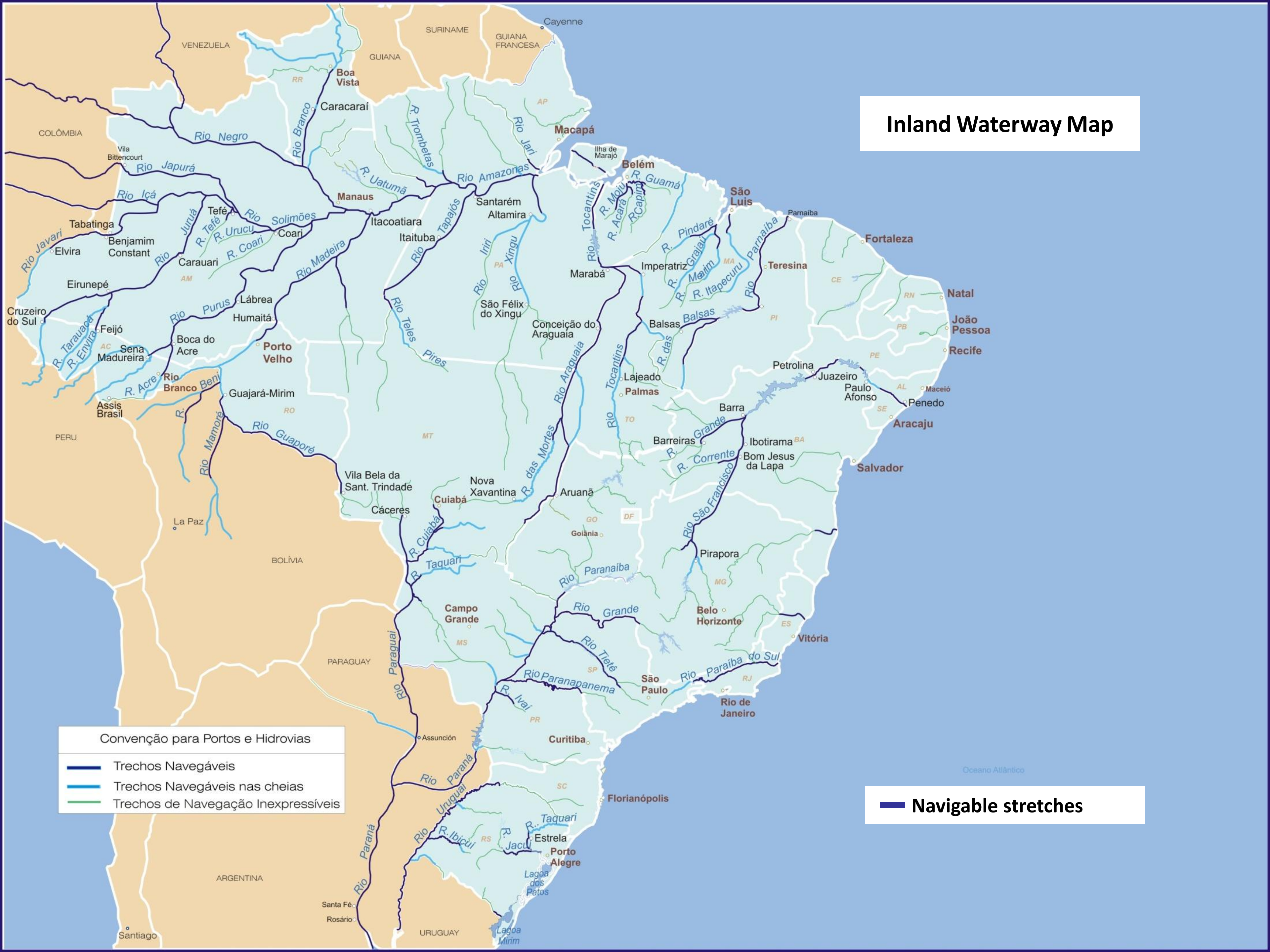
- **New railway expansion lines**:

  Passengers traffic may be effectively operated in regular basis

  (under analysis by the Government)

Highlights of the Inland Waterway Sector

Inland Waterway Map



Inland Waterway Development

- Brazil is already developing the rehabilitation and structuring of the railway system
- Now the challenge is to structure an inland waterway system that contributes to a better equilibrium of the Brazilian transport matrix in terms of energy, economy and sustainability
- Such an arrangement implies a governmental articulation concerning the multiple use of water resources and the appropriate environmental handling

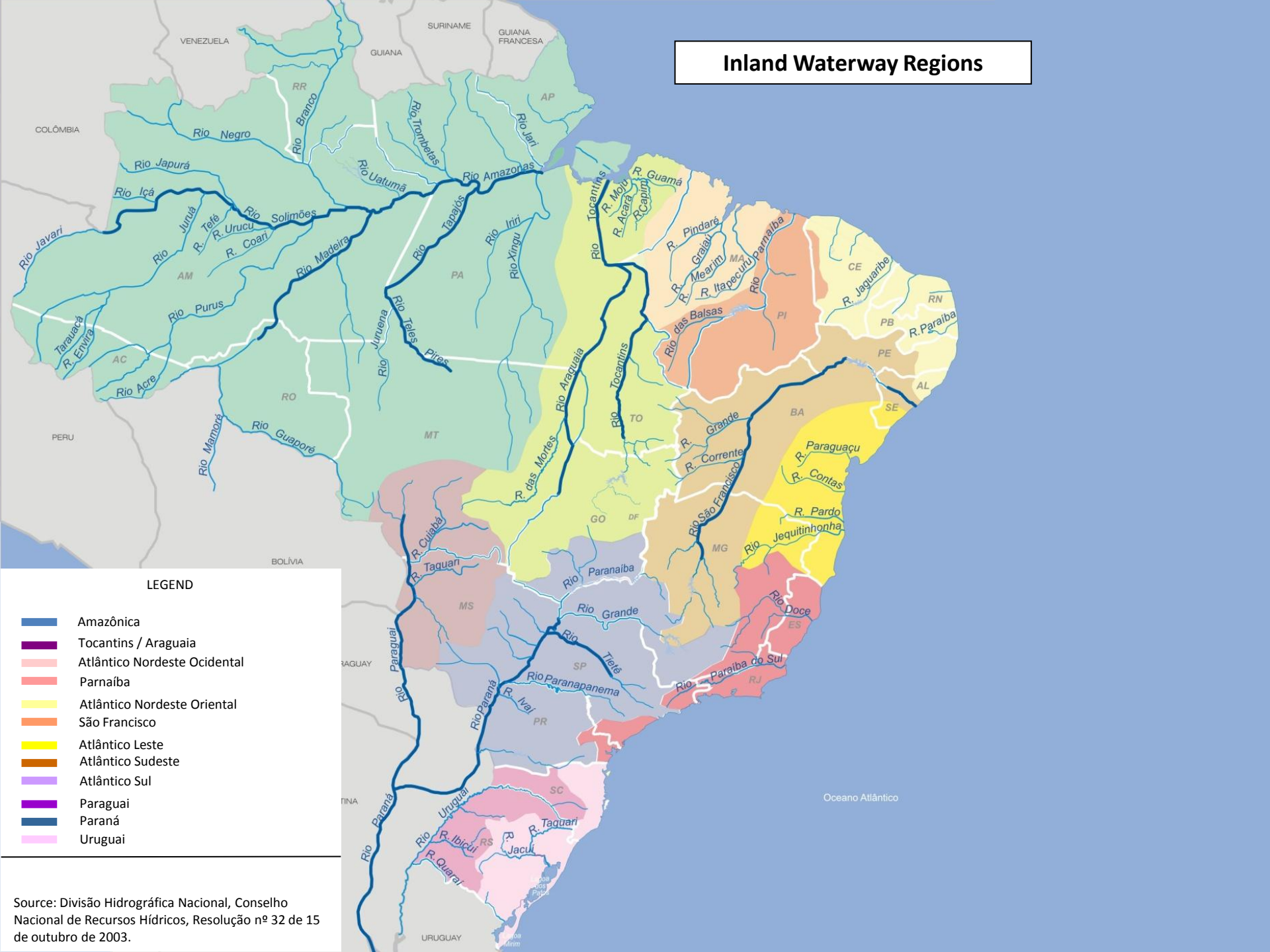
Strategic Inland Waterway Plan

Structures an organized and comprehensive instrument that, on the basis of the main potential-navigation hydrographic regions, aims to:

- Identify dredging and rock blasting works
- Identify and ranking works of dam crossing
- Structure inland waterway terminals
- Define institutional parameters for the inland waterway sector, considering the multiple use of water (water supply, irrigation, energy generation (*Brazilian matrix is clean, basically hydro-electric generation*), recreation, sanitation and transportation

Strong articulation and integration with other public and private agencies (especially the National Water Agency)

Inland Waterway Regions



LEGEND

- Amazônica
- Tocantins / Araguaia
- Atlântico Nordeste Ocidental
- Parnaíba
- Atlântico Nordeste Oriental
- São Francisco
- Atlântico Leste
- Atlântico Sudeste
- Atlântico Sul
- Paraguai
- Paraná
- Uruguai

Source: Divisão Hidrográfica Nacional, Conselho Nacional de Recursos Hídricos, Resolução nº 32 de 15 de outubro de 2003.

Opportunities for Cooperation

- All those points, specially concerning the increasing of the railway network, represent challenges to be faced by Brazil, as well as opportunities for transferring technology and international experience and for partnership on investments.

- Worldwide countries will certainly be important partners in such a process.

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