



The BNDES Support to the Biofuels Industry

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Agenda

1. **BNDES and the Biofuels Industry**
2. **Innovation Support: The PAISS Program results**
3. **What are the main investment drivers in Brazil?**
4. **Closing remarks**

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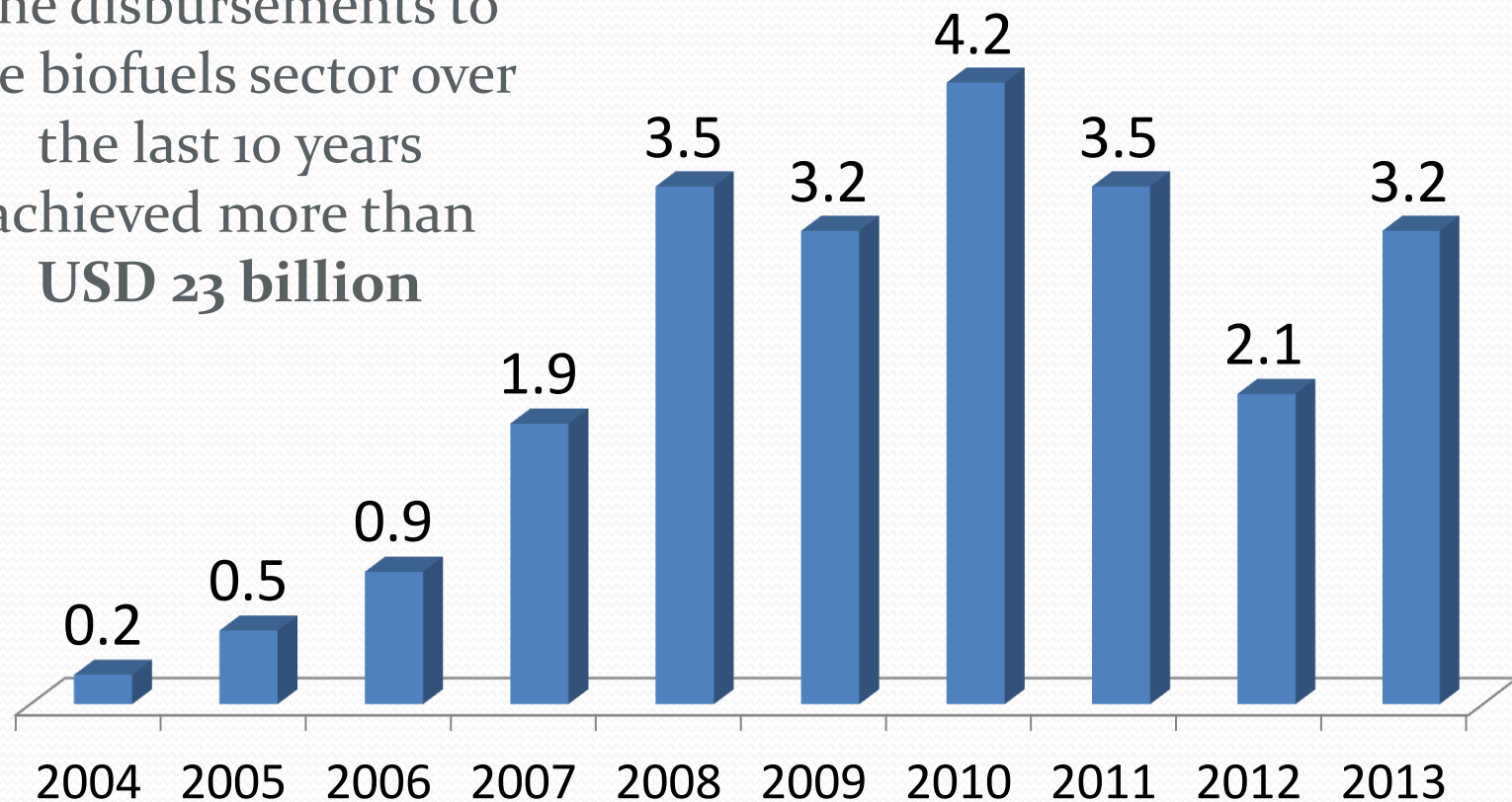
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BNDES and the biofuels industry

- ✓ From 2004 to 2013, BNDES financed almost 100 new projects (expansion and greenfields) which represent:
 - Contracts of more than US\$ 20 Billion
 - 150 million tons of new crushing capacity (almost a 50% expansion of Sugar & Ethanol Industry since 2003)
- ✓ Portfolio: 131 economic groups
- ✓ Financial agents: 91 accredited institutions
- ✓ Instruments: credit loan, project financing, equity participation and grants

BNDES and the biofuels industry

The disbursements to the biofuels sector over the last 10 years achieved more than **USD 23 billion**



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BNDES Innovation Support: PAISS in breaf

What is it for?

Joint plan (BNDES and FINEP) to finance innovation in the sugarcane-based biofuels and chemical sectors thru initiatives (business plans) that focus on developing, producing and commercializing new industrial and agricultural technologies to manage and process the sugarcane biomass

What did it offer?

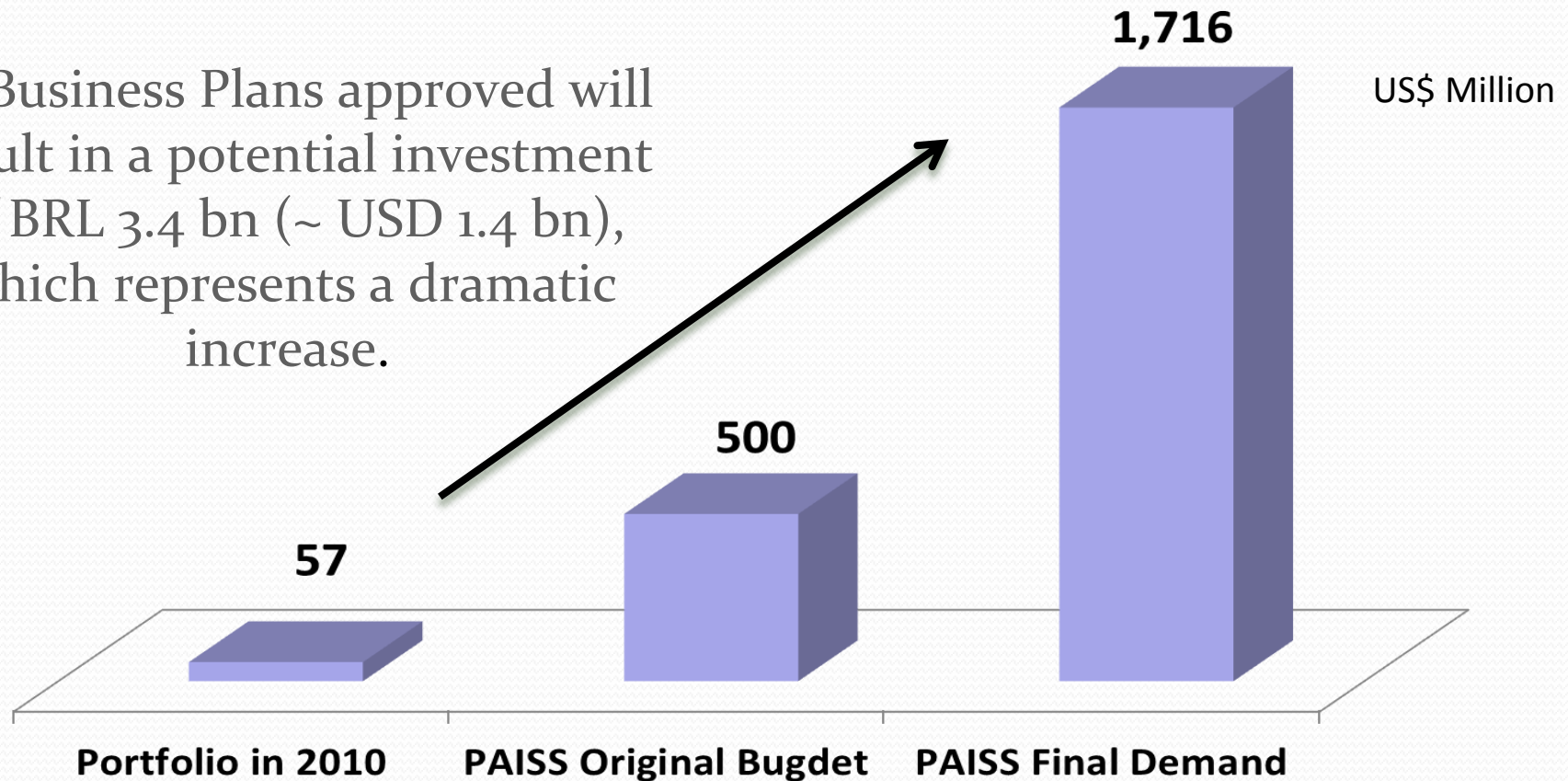
Coordination of the efforts and financial instruments between the BNDES and FINEP, with a budget of BRL 2.5 bn (~ USD 1.0 bn)

What were the focus points?

i) Cellulosic Ethanol; ii) Other Biofuels, including biojet; iii) Biochemicals; iv) Genetic improvement and v) harvesting and planting machinery and equipment

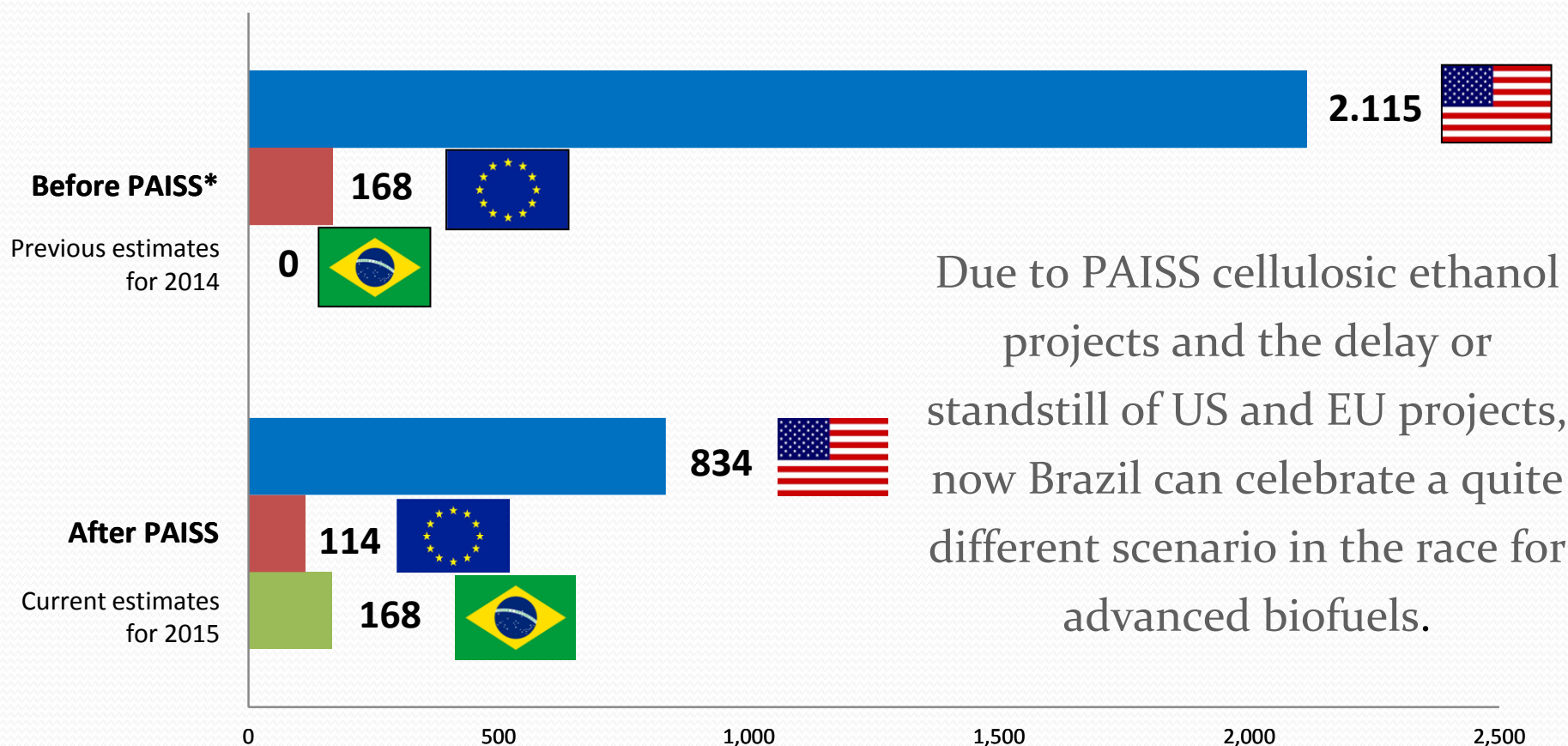
Industrial PAISS: impact on investments

35 Business Plans approved will result in a potential investment of BRL 3.4 bn (~ USD 1.4 bn), which represents a dramatic increase.



Industrial PAISS: impact on production

Estimates of cellulosic ethanol production for 2015
(million liters)*



Source: FO Licht, Nyko et al (2010) and BNDES. (*) Before-PAISS estimates refer to 2014.

Agriculture PAISS: main results

R&D Focus	Nº Business Plans	Value (US\$ million)
Genetic improvement	6	135
Machinery and equipment	5	219
Planning and production systems	12	220
Seedling production	6	72
Industrial systems for new energy crops compatible to sugarcane cycle	6	202
Total	35	849

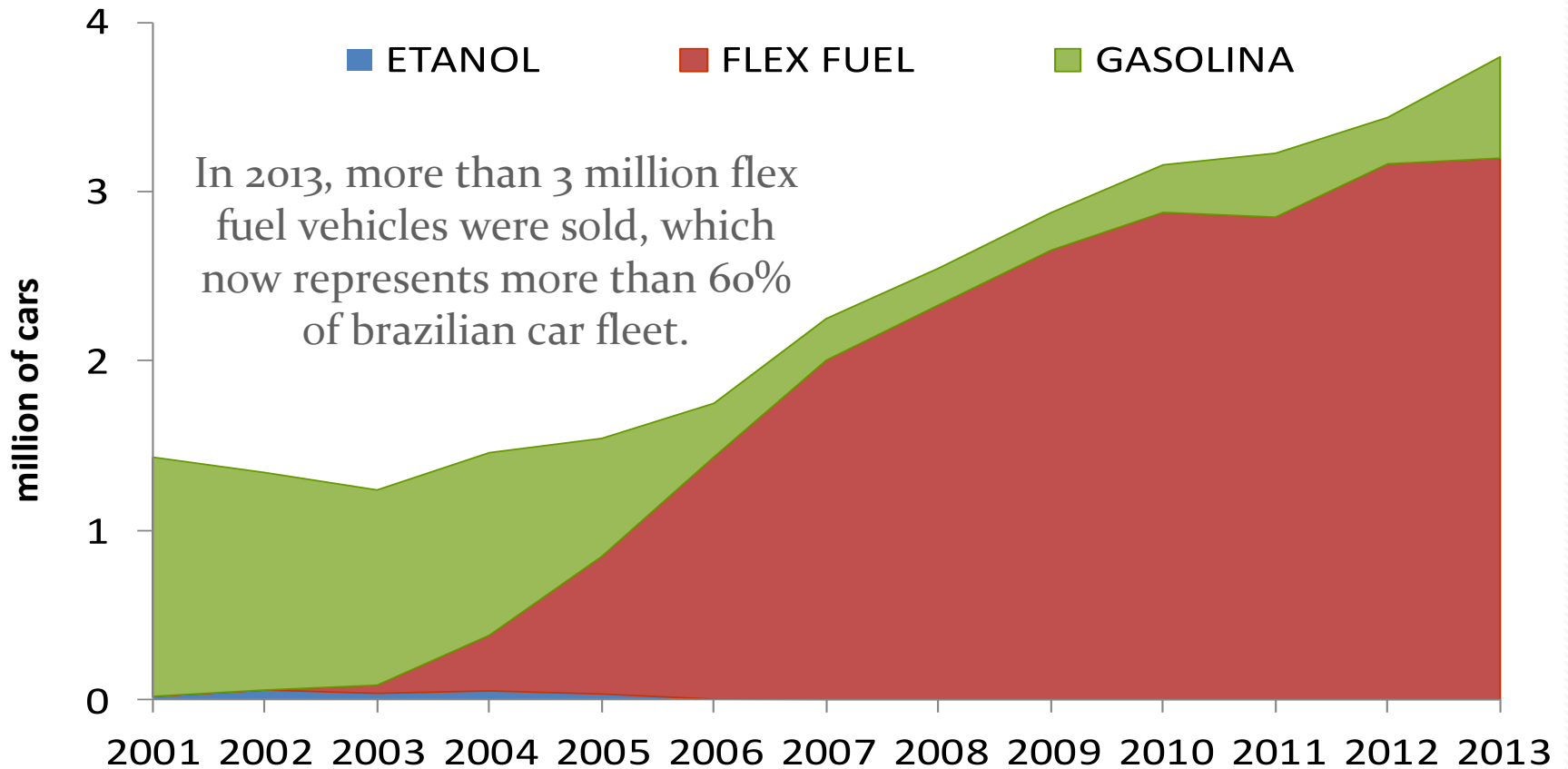




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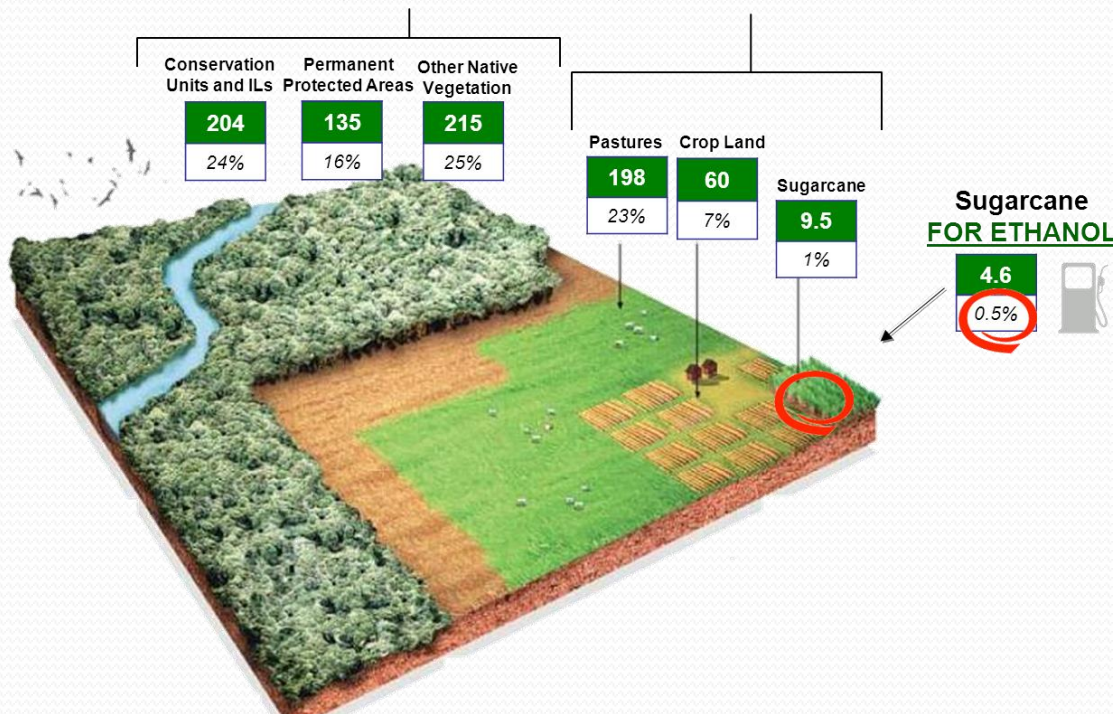
Growing Fuel Market



Land availability

Million Hectares

Total Area	Native Vegetation	Land in Actual Use	Other Uses
851	554	258	38
100%	65%	30%	5%



By improving the low yield of cattle production, a large amount of land will be available for other purposes. Brazilian federal agricultural zoning considers up to 64 Mha able to produce sugarcane w/o irrigation.

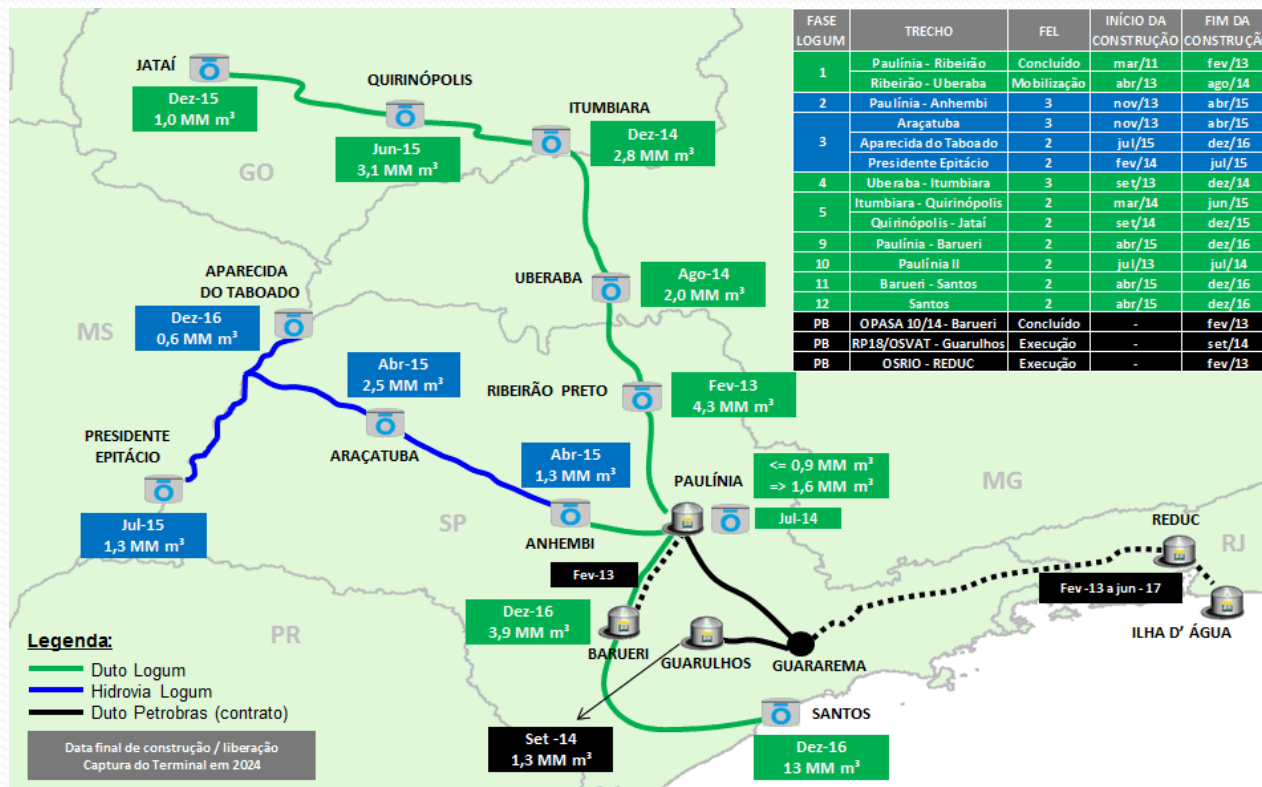
Well established sugarcane industry



Brazil has more than 400 sugarcane mills that can crush around 700 million tons per year. Furthermore, lack of financial/technological assets means the majority still only process sugarcane juice...

... which represents a great opportunity for those who are able to develop new technologies to be integrated to these plants, generating synergies and cost reductions for any sugarcane-based product.

New infrastructure coming up



Around US\$ 3.5 billion has been invested in a 1,333 km pipeline (green line), dedicated only for ethanol, which links producing to exporting/consuming regions. The first stretch has been operational since the end of 2013.

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Closing remarks

1. With the increase of domestic demand and consolidation of ethanol as a sustainable and competitive alternative energy, investment in innovative technology is paramount to guaranteeing Brazil's leadership in the biofuel industry.
2. The success of the PAISS program can be verified by the number of commercial plants scaling up new sugarcane by-products with ready-to-go technologies.
3. Now the priority is to foster R&D investments in agricultural technologies, including genetic improvement of sugarcane varieties and new machinery/equipments dedicated to sugarcane planting & harvesting.



Thank You For Your Attention!

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