



2nd GEN BIOFUELS

Contribuição da bioenergia e dos bioprodutos para implementação do Acordo de Paris sobre o clima

Brasília, Brasil – 24/10/2016



ABBI
ASSOCIAÇÃO BRASILEIRA DE
BIOTECNOLOGIA INDUSTRIAL

LEADERS OF THE BIOECONOMY

ABENGOA

 **BASF**
We create chemistry

biochemtex


 **CTC** | CENTRO DE
TECNOLOGIA CANAVIEIRA

 **DOW**

 **DSM**
BRIGHT SCIENCE. BRIGHTER LIVING.

 **DUPONT**®

 **GranBio**

raízen

novozymes® 
Rethink Tomorrow

 **SOLVAY**
asking more from chemistry®

WHAT WE WANT

Place Brazil in the forefront of a global bioeconomy through the development of industrial biotechnology



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DISRUPTIVE GLOBAL TRENDS

WHY CHANGE NOW?


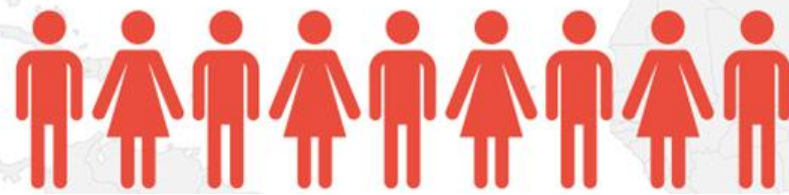
 Growing Middle Class

  2x need for industrial resources

  GDP USD 206 trillion

  3bn with income growth 5x

 Aging population & Urbanization

  9 billion

  70% urban

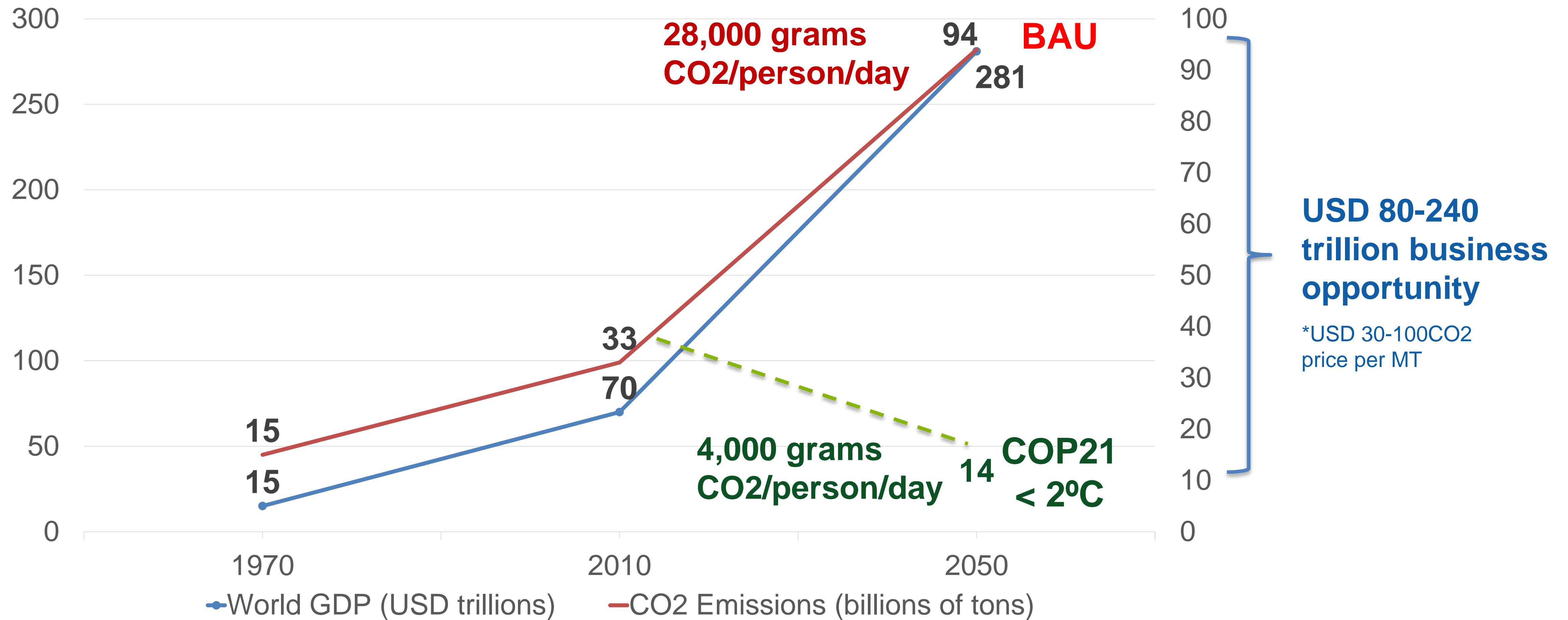
  90 years

 Climate Change & Sustainability

The failure to mitigate and adapt to **climate change is the greatest global risk impacting business.** WEF, Global Risk Report 2016

SUSTAINABILITY & CLIMATE CHANGE

CHALLENGE VS. OPPORTUNITY

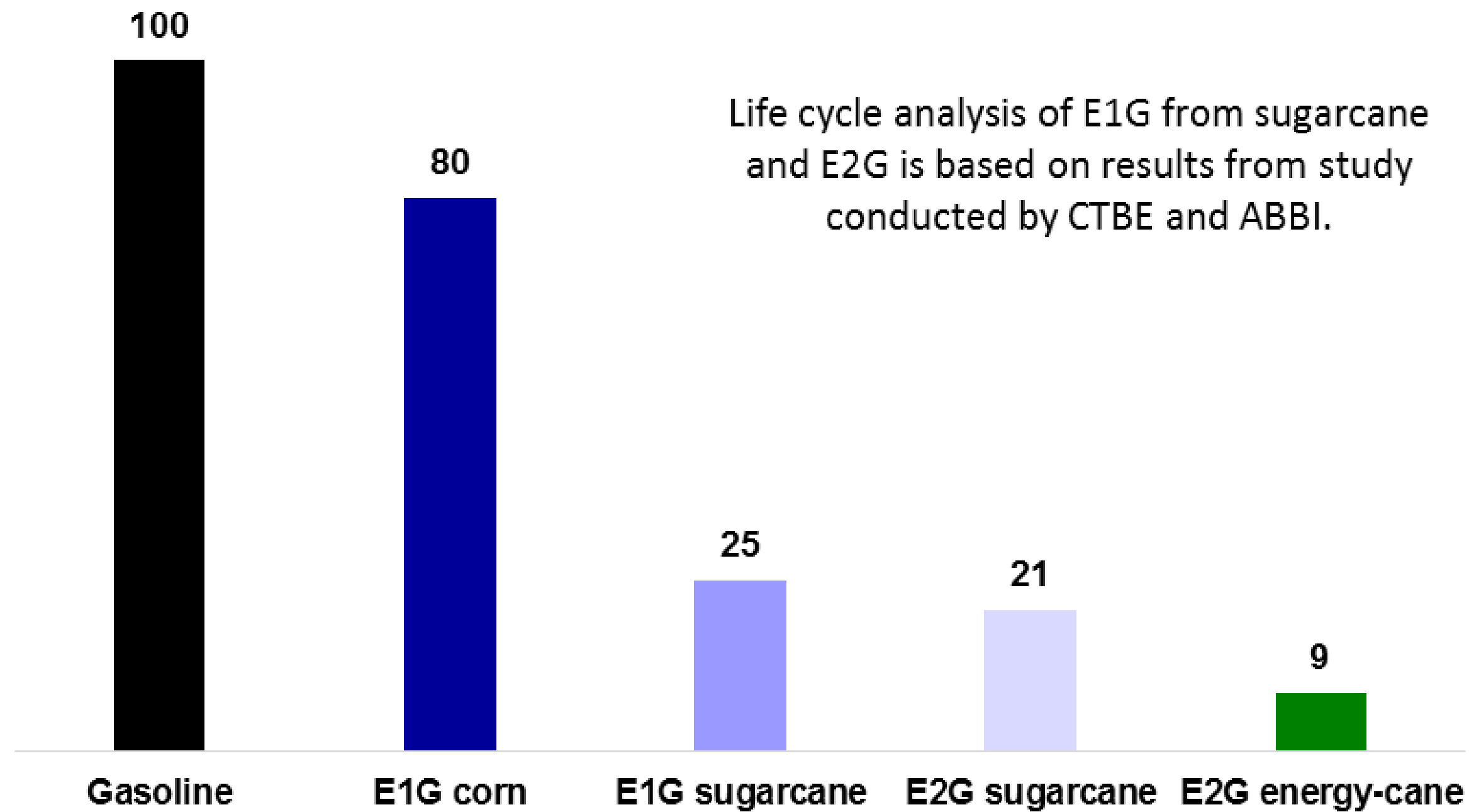


Source: Rafael Cayuela Valencia, Dow (2016)

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THE SOCIAL AND ENVIRONMENTAL IMPACTS

Potential reduction of CO2 emitted from gasoline (base 100)



Source: US EPA, BNDES, CTBE and ABBI

E2G reduces by more than 91% GHG emissions, ensures food and energy security, and adds value to Brazil's ag sector.

The social cost of CO2 estimated by the EPA comes to USD 37 per ton (2015) and may represent savings of at least R\$ 22 billion/year for Brazil.

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THE FUTURE DESIGNED THROUGH BIOTECHNOLOGY

2G ethanol is expected to reach full competitive conditions after a period of technology solutions development (which requires effective support to R&D risk) and market formation (with stable incentives horizon - 5 to 10 years).

In this setting, E2G enhances the competitiveness of E1G (mainly by reducing the intensity of capital per unit of output).



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THE FUTURE DESIGNED THROUGH BIOTECHNOLOGY

- Industrial biotechnology has the potential to add about **USD 53 billion annually** to Brazil's GDP in a 20-year horizon.
- To realize this potential, industry is **required to invest nearly USD 132 billion** over a 20-year period.
- Considering the direct and indirect effects of the annual production and the required investments, the industry can produce an additional **USD 400 billion (of investments, diluted over 20 years)** and **USD 160 billion annually** with the added production.
- Tax revenue associated with the potential investments and production amount to **USD 130 billion (during the investment period)** and **USD 50 billion (annually)**.



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THE PATH TRAVELLED UNTIL TODAY

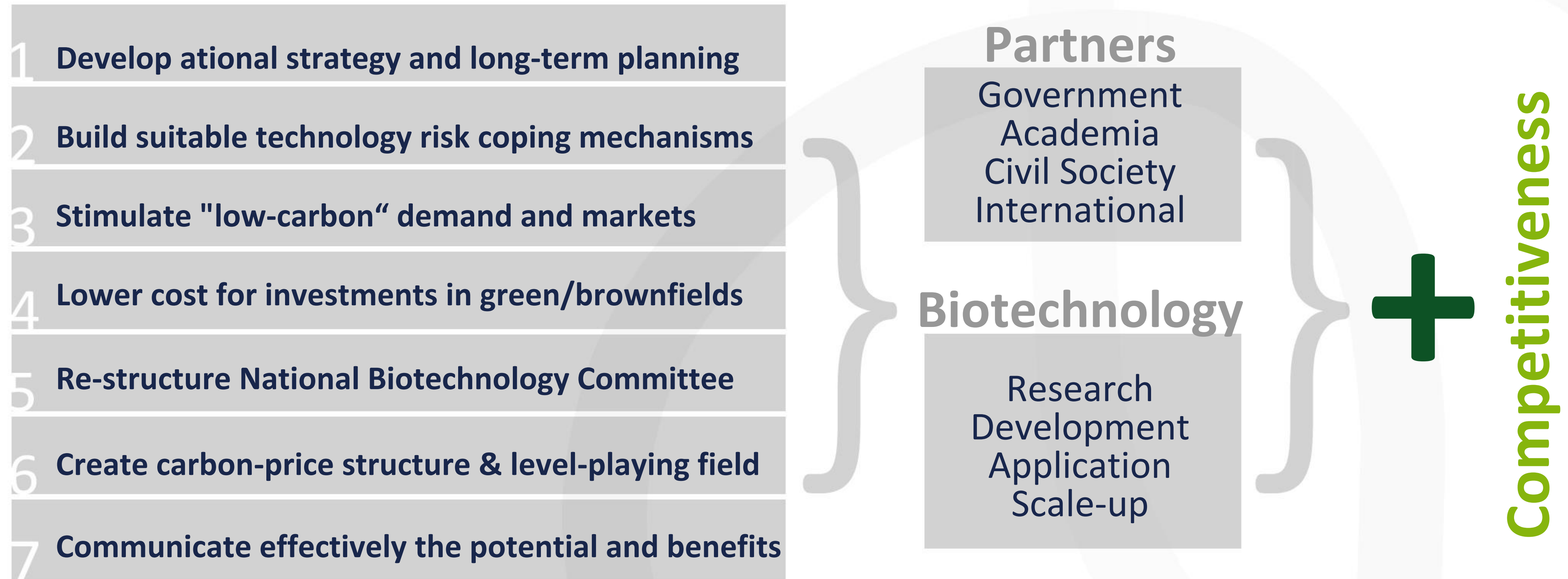


WHERE WE STAND

Critério	EU	USA	Brazil	China
Public Policies & Regulations	C	A	B	B
Financing & Incentives	B	A	B	A
Public Perception & Demand	B	B	B	B
Level of R&D Activity	A	A	C	B
Level of Production Activity	C	B	C	A
Cost & Availability of Biomass	B	A	A	B
Other Costs of Production	C	B	B	A

Source: European Commission (2015)

7 STEPS TO THE FOREFRONT OF THE GLOBAL BIOECONOMY



Thank you!

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