



ALIANÇA BIKE
Associação Brasileira do Setor de Bicicletas

ANALYSIS AND PROJECTIONS OF EPAC'S IN BRAZIL

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Motorized vehicles in Brazil: **100.094.725** (Denatran, 2018)



Average cost of na automobile in São Paulo: **R\$ 12.830,00/month**





Recife



Rio de Janeiro



VIA HOEMA
8 2775

Km
2.8

São Paulo

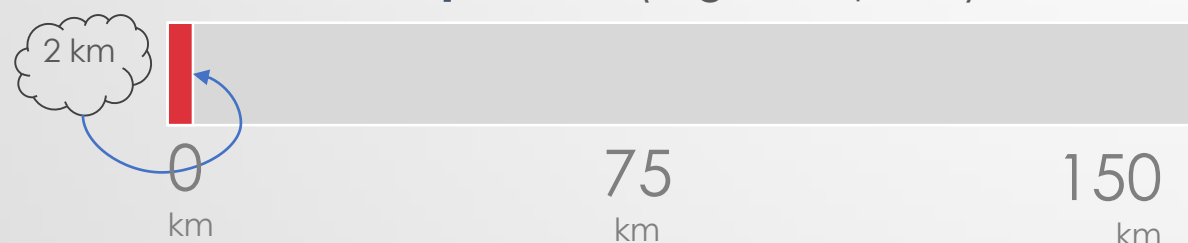
ENERGY EFFICIENCY

Cars vs. Pedelecs



Each R\$ 1

(1l gas = R\$ 4,20)



VS



Pedelecs are

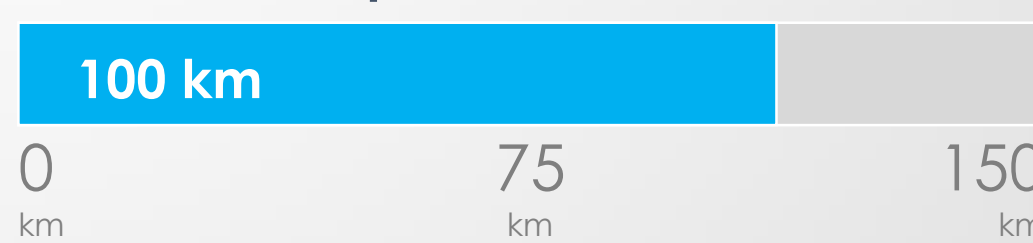
53 times

more EFFICIENT
than cars.



Each R\$ 1

(1l gas = R\$ 4,20)



EPAC Strategy

Working group for EPAC market development since 2017

90 companies and associations affiliated - 15 EPAC industries

Market data, economic studies and research

Legislation & regulation

EPAC use campaigning

EPAC Parliamentary front (national level), w/ 12 member of Congress

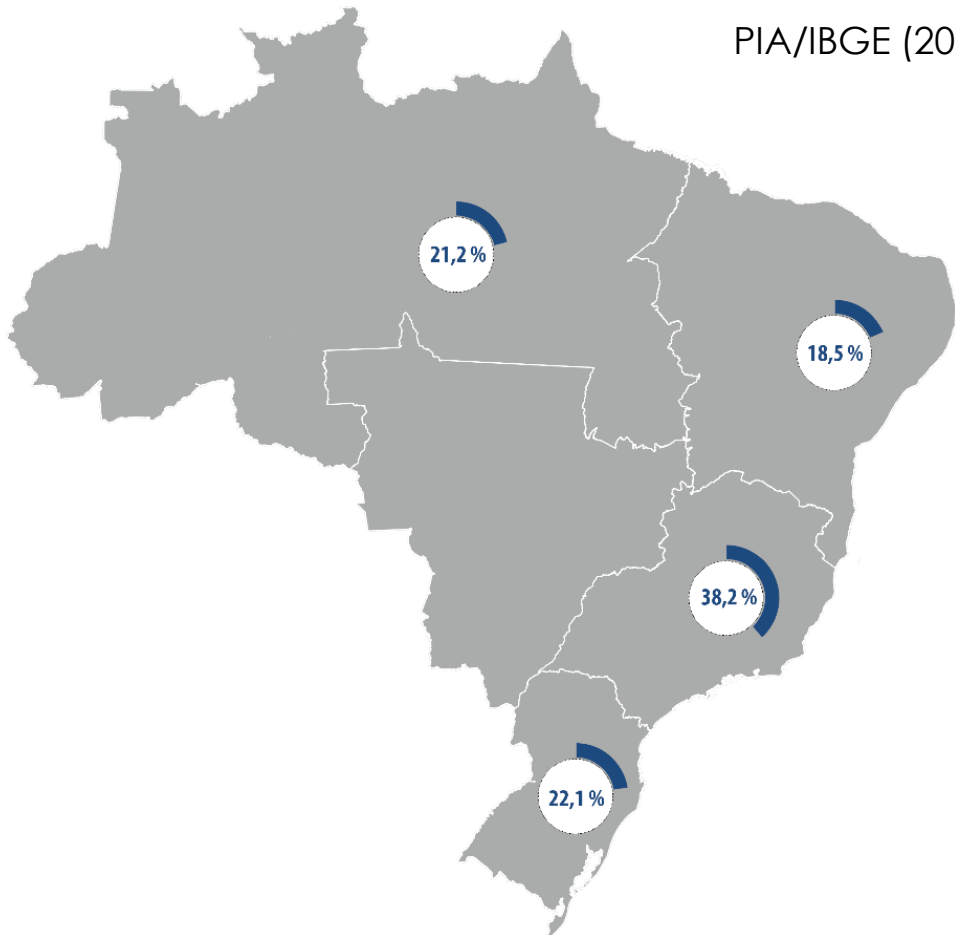
National campaign for lower EPAC taxes



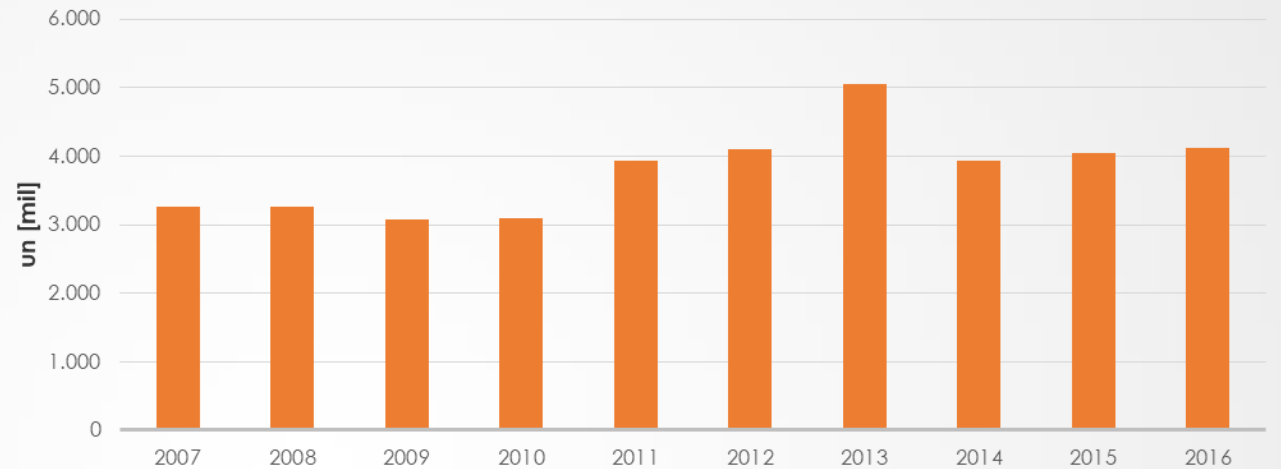
2007-2016

National
Production

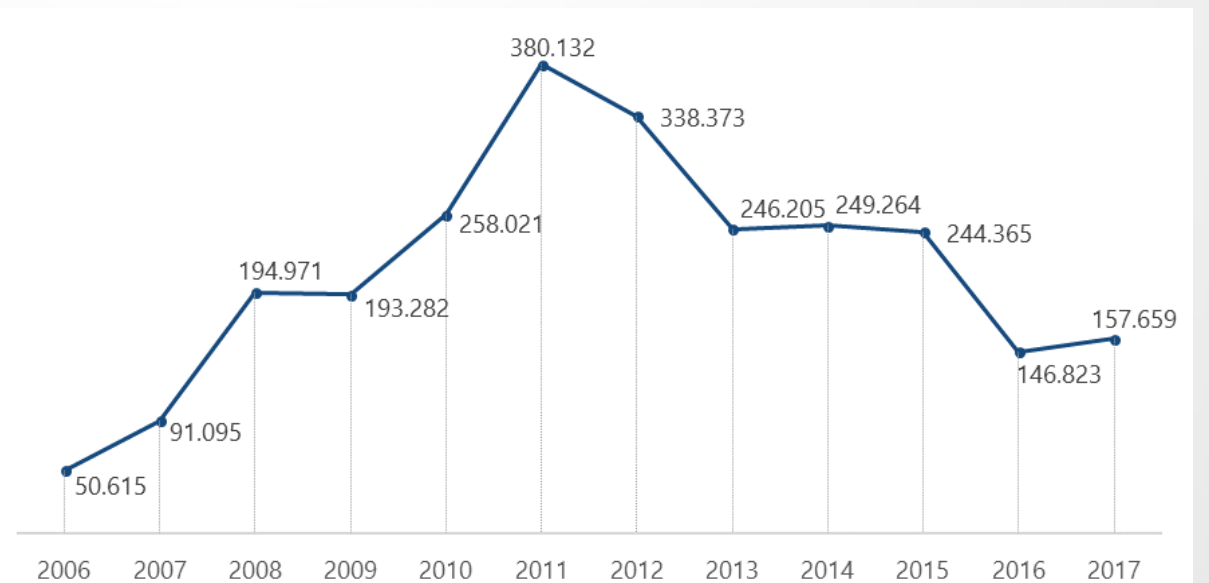
PIA/IBGE (2016)



TOTAL BICYCLES (HS 8712) SALES IN BRAZIL



TOTAL BICYCLES (HS 8712) IMPORTS IN BRAZIL





What about EPAC's?

May 2009 - Resolution 315 classified all "EPACs" as **mopeds**, without making any distinction. Limiting to the maximum weight of 140 kg and maximum speed of 50km/h.



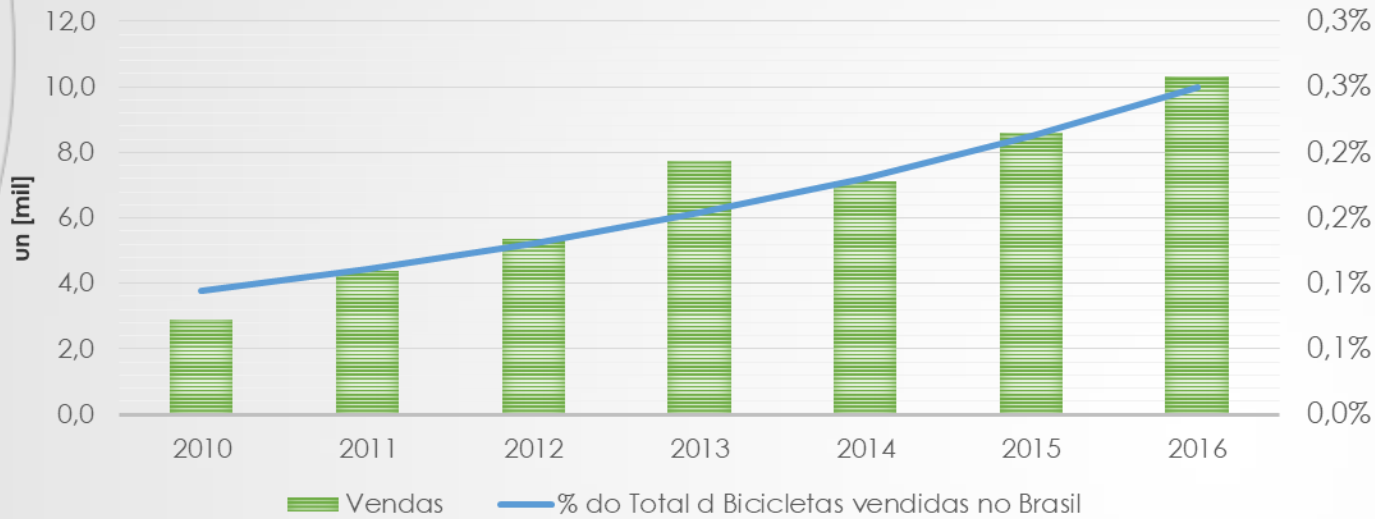
November 2013 - Resolution 465 establishes the correct distinction for EPAC's, setting up new criteria and equating EPAC's to human propelled bicycles regarding all traffic rules.



- Engine power up to 350 watts
- Pedal assisted up to 25 km/h
- Lights, helmet obligation
- No acceleration

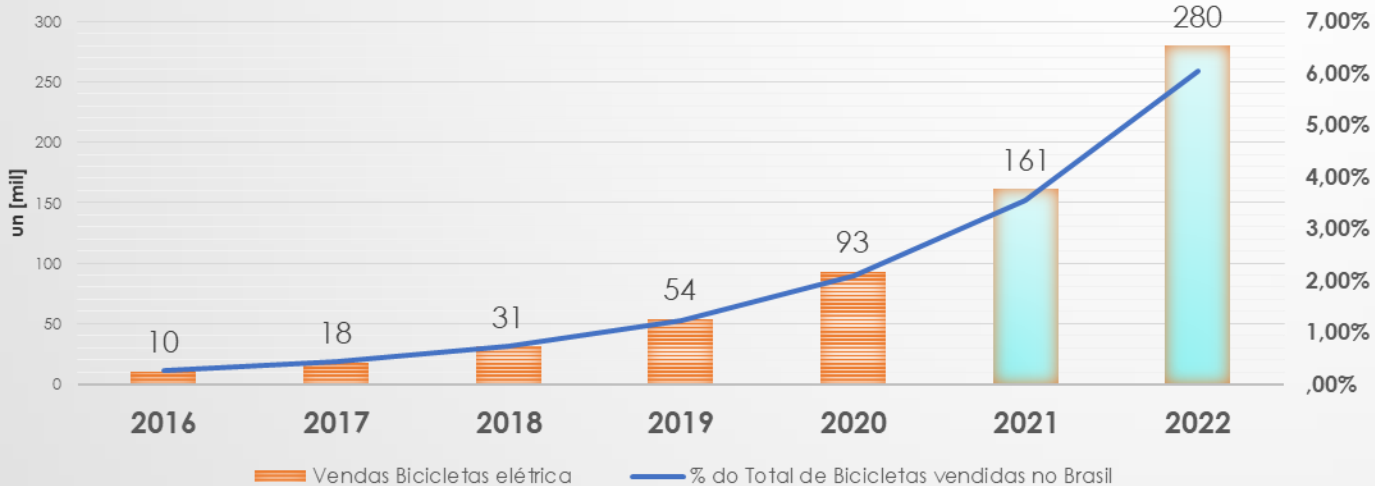
BRAZILIAN EPAC MARKET

EPAC SALES



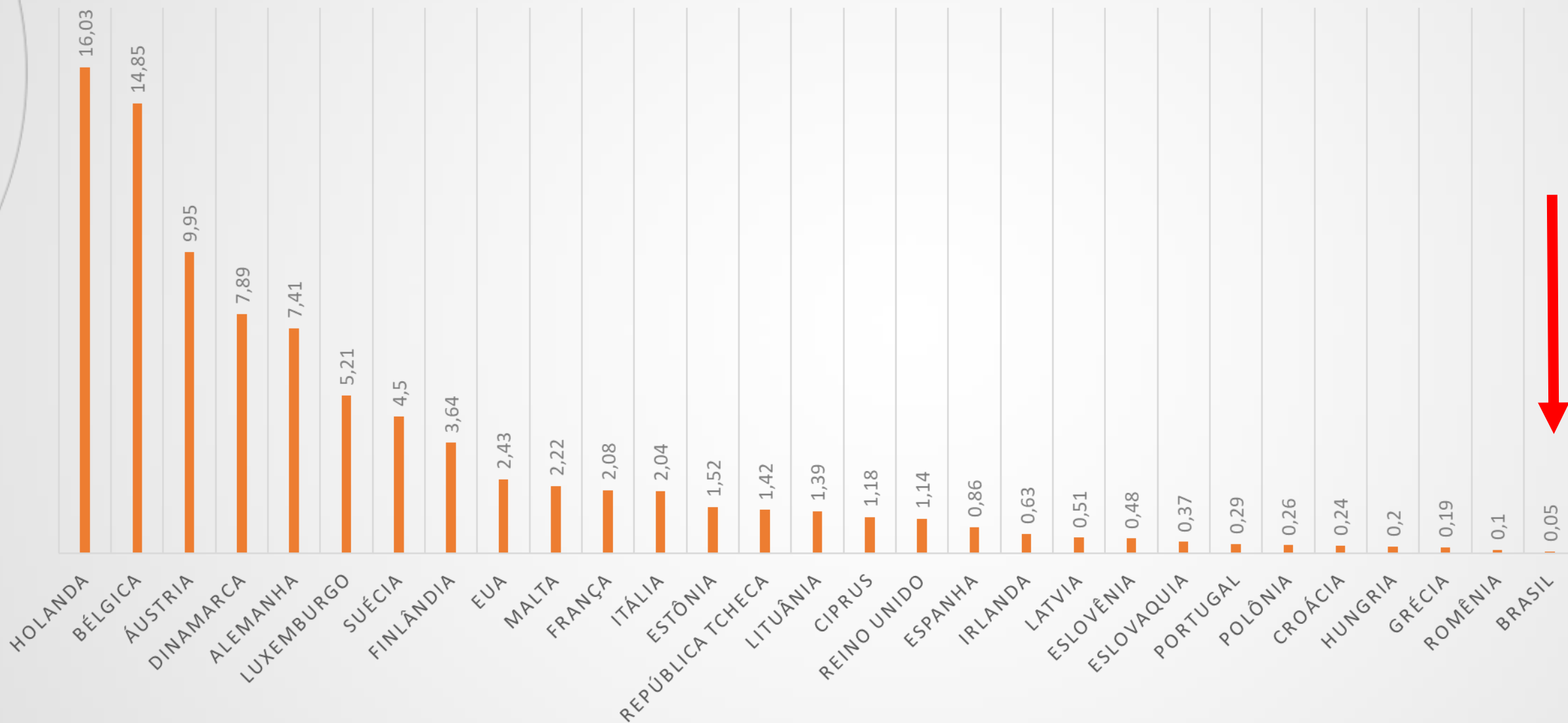
EPAC sales represented a market share of 0,30% in 2016 and 0,70% in 2018.

EPAC SALES AND PROJECTION



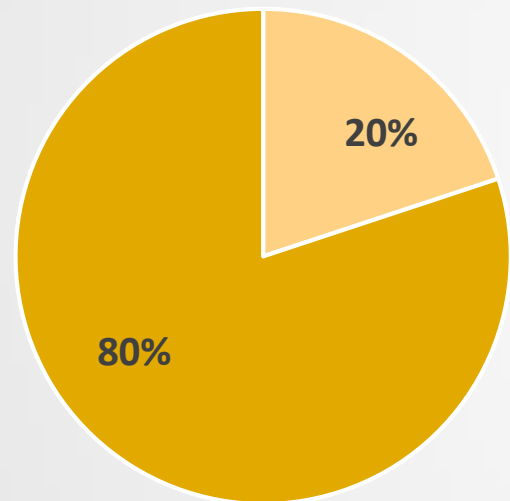
Sales of electric bicycles have shown a compound annual growth rate (CAGR) of around 19% since 2010

EPAC SALES/THOUSAND INHABITANTS | 2016



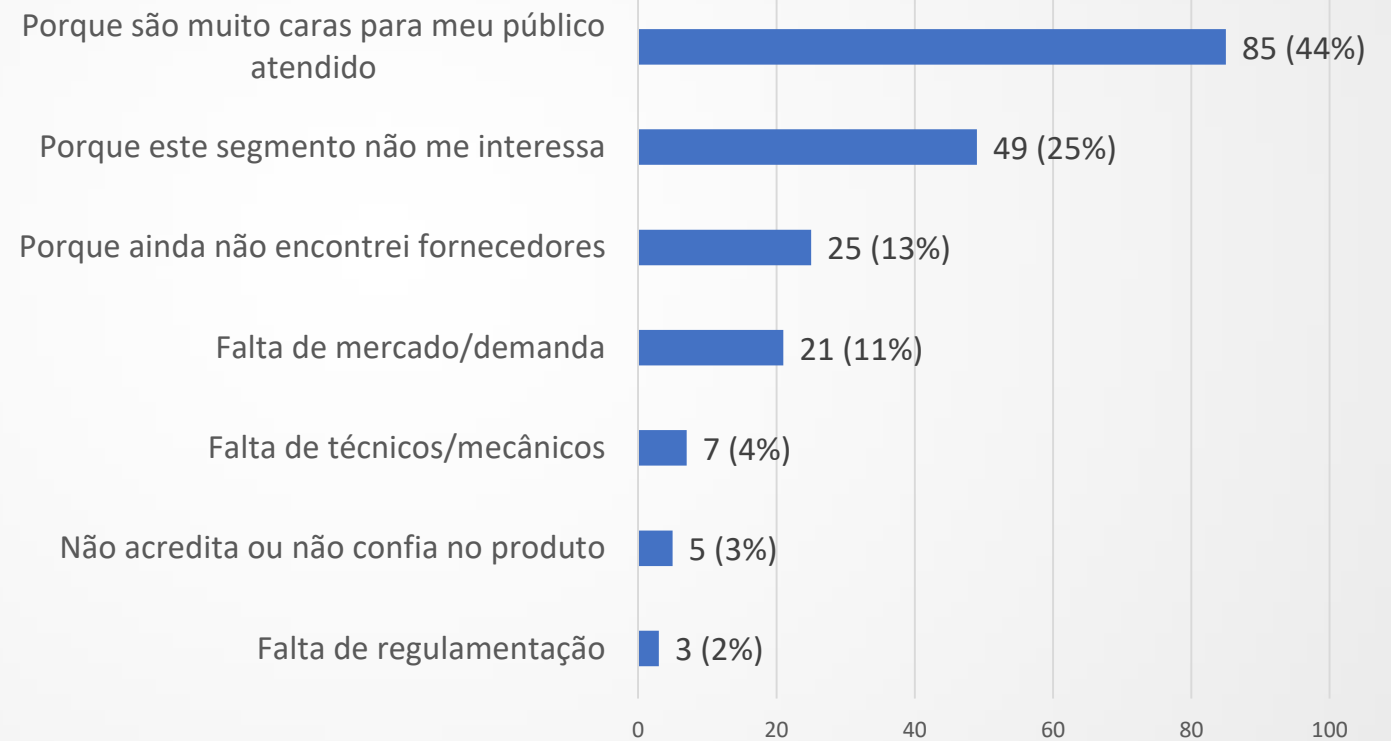
EPAC's: BICYCLE RETAILERS | 2018

Percentage of bike shops selling EPAC's in Brazil



- Comercializa bicicletas elétricas
- Não comercializa

Why are you not selling EPAC's yet? (main reason)



EPAC TAXES

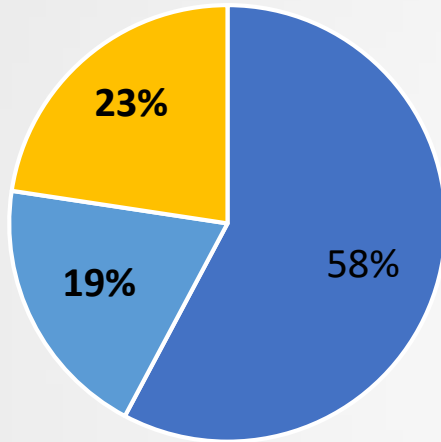
For the hypothesis below, we compared an exemplary price for the two types of bicycle ("BE" - electric and "BC" - conventional) assuming it to be \$1,000:



US\$	EU		USA		Japão		Brasil	
	BE	BC	BE	BC	BE	BC	BE	BC
II (%)	8.00	14.00	0.00	11.00	0.00	0.00	20.00	35.00
Imposto nacional (%)	15.00 ³⁰	15.00	6,51 ³¹	6,51	8.00 ³²	8.00	IPI% 35 PIS% 2,1 COFINS% 9,65 ICMS% 18,00	IPI% 10 PIS% 2,1 COFINS% 9,65 ICMS% 18,00
Total	1,242	1,311	1,065.1	1,182.15	1,080	1,080	1,977	1,886.62

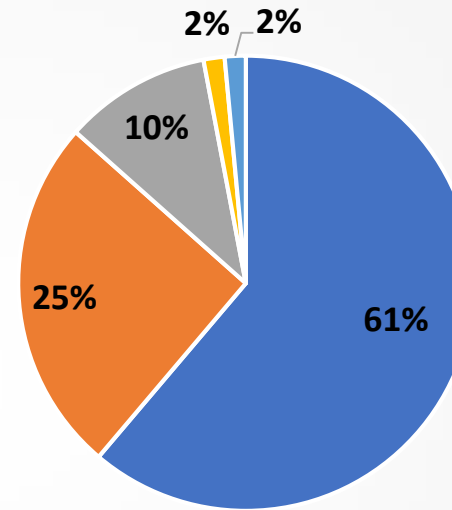
EPAC's: BICYCLE RETAILERS | 2018

Do you intend to sell EPAC's over the next years?



■ Sim ■ Não sabe ■ Não

EPAC'S sold, per type



■ Urbana ■ MTB ■ Dobrável ■ Cargueira ■ Infantil

EPAC'S cost for consumers:

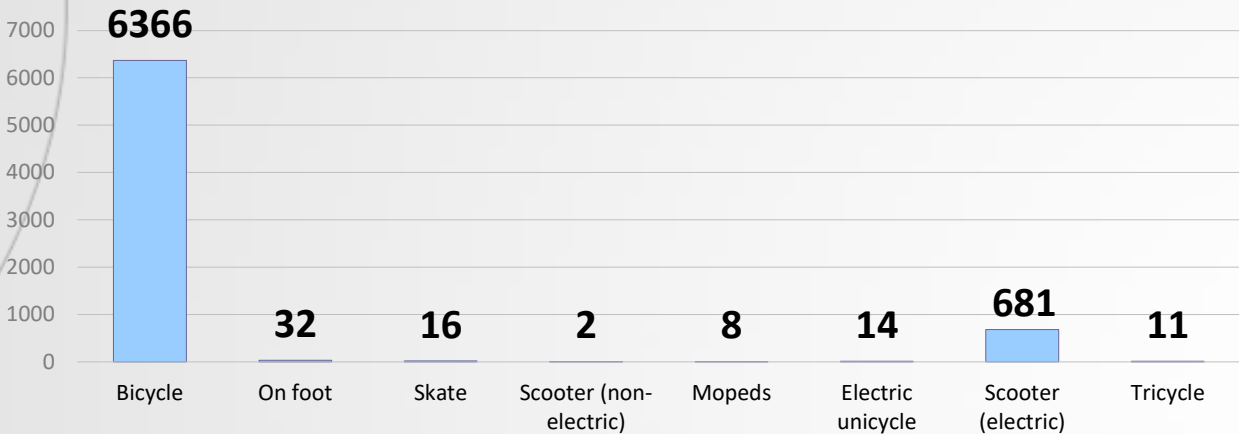
- Most expensive: R\$ 37.000,00
- Cheapest: R\$ 2.500,00
- **Average cost: R\$ 4.000,00**



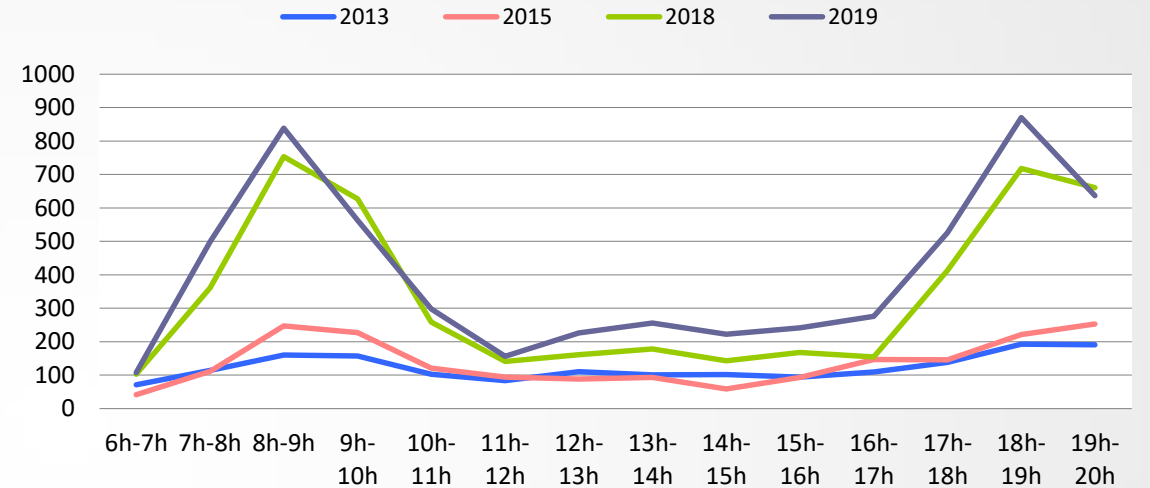
CASE STUDY: FARIA LIMA
AVENUE CYCLE LANE
(SÃO PAULO)

CASE STUDY: BIKE LANE - AV. FARIA LIMA | 2013, 2015, 2018, 2019

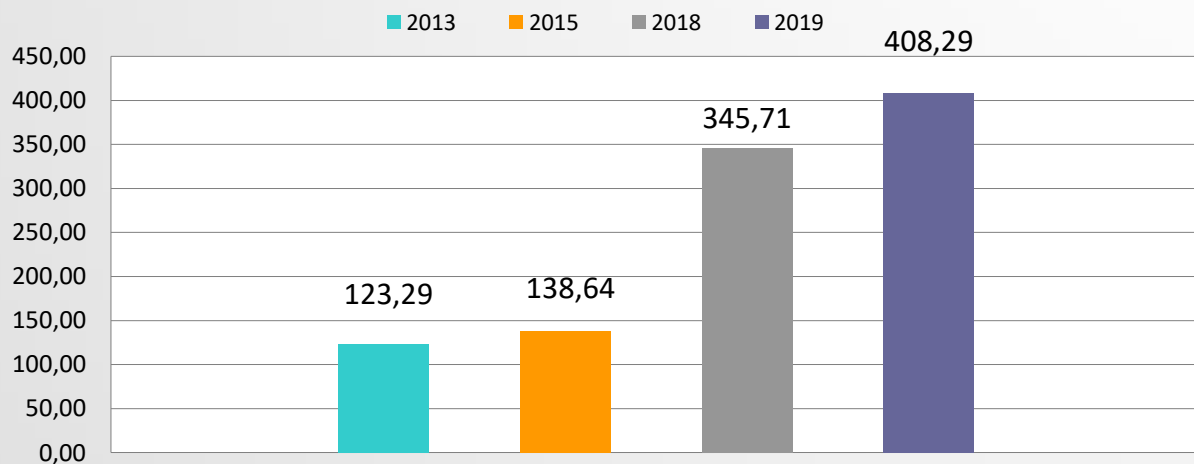
Total trips (2019) - from 6am to 10pm



Cyclists per hour (float)



Average cyclists per hour

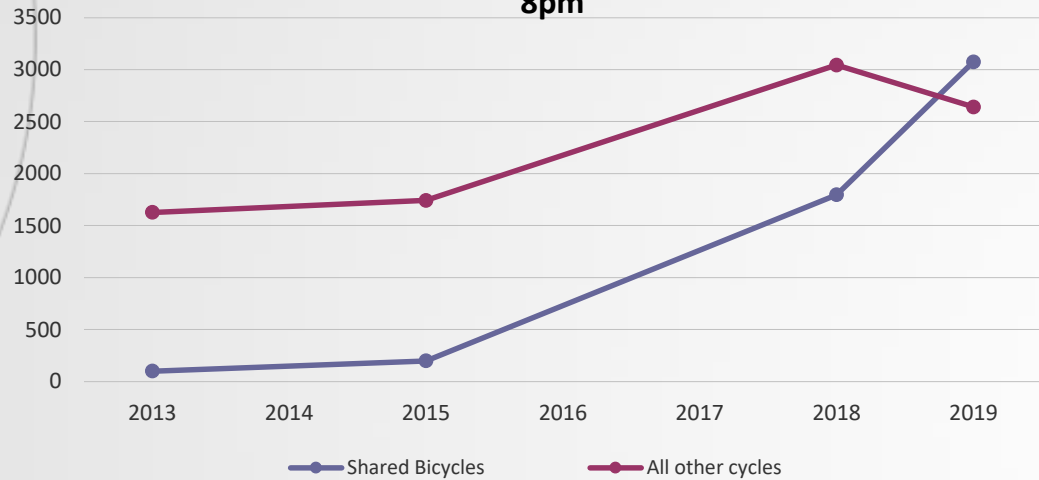


2019 - from 6am to 10pm

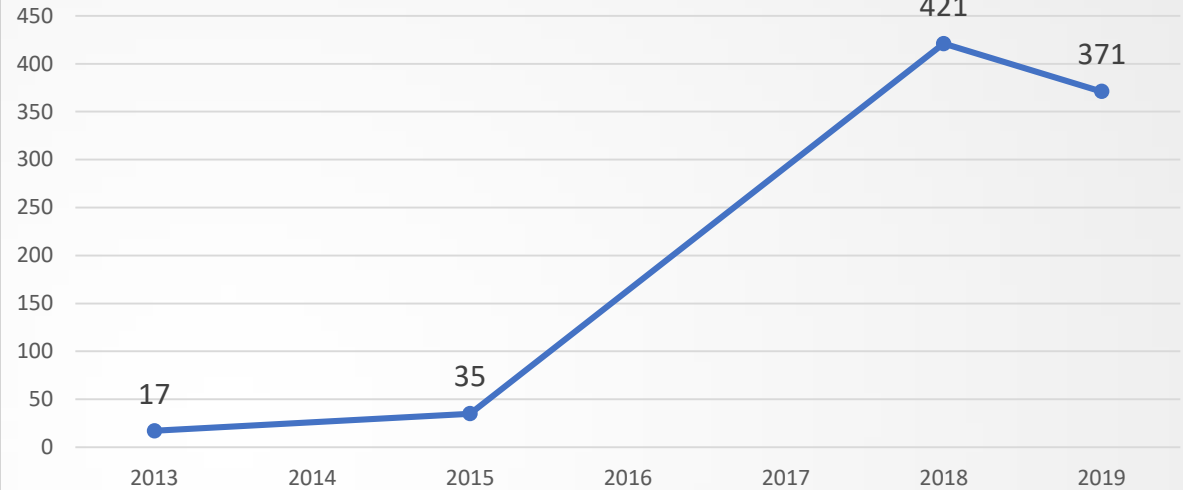
Bicycles per type	Total de viagens	Percentual
Individual ordinary bicycles	2616	41,09%
Shared Bicycles	3290	51,68%
Pedelecs	414	6,50%
Cargo-bikes	46	0,72%
Total:	6366	100%

CASE STUDY: BIKE LANE - AV. FARIA LIMA | 2013, 2015, 2018, 2019

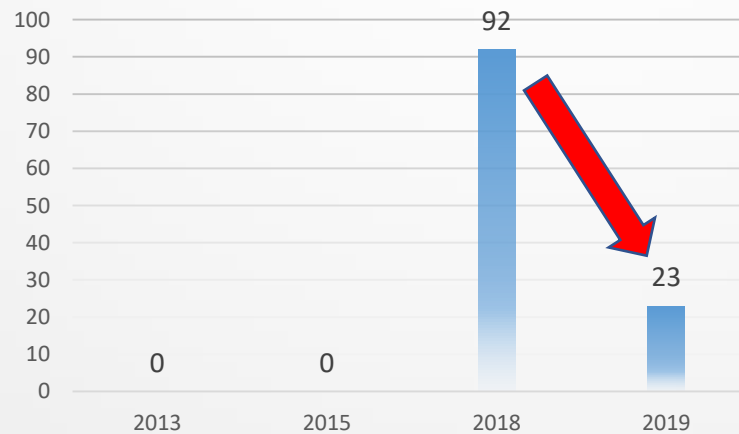
Shared bicycles vs all other cycles - total trips from 6am to 8pm



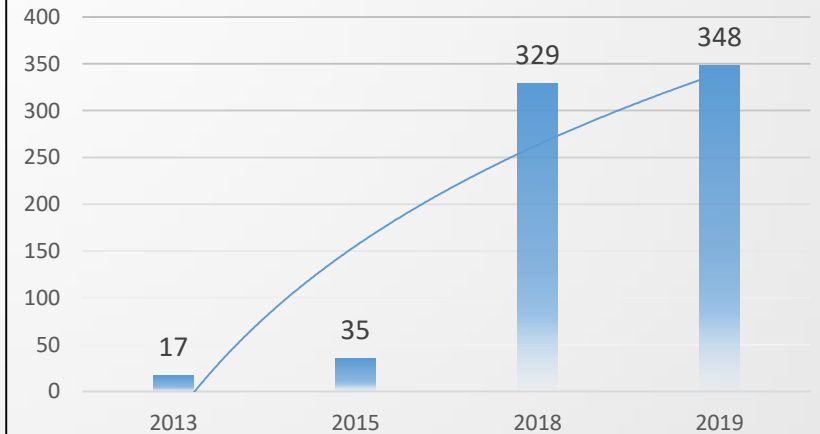
Pedelec trips



SHARED PEDELEC TRIPS - FROM 6AM TO 8PM



PRIVATE PEDELEC TRIPS - FROM 6AM TO 8PM





Findings & Conclusion

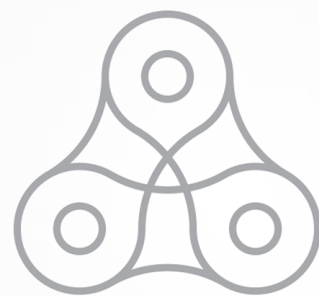
FINDINGS & CONCLUSION

Electric bicycles could play a key role in urban mobility, logistics, quality of life in Brazilian cities. Also they could be decisive in modal shifting from cars.

In order to boost EPACs in Brazil, the cost of the product and the lack of cycling policies – such as bikelanes – are the two main factors inhibiting EPAC's popularization.

Comparative analysis w/ other countries showed that the market for EPACs is even more encouraged (tax breaks) than that of conventional bicycles. Brazil is an exception.

Data shows EPACs are enlarging bicycle economy in Brazil instead of cannibalizing it.



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