Vehicle to grid (V2G) evaluation in Brazil

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Context

- Concerns about energetic transitions and climate changes;
- Renewable energy as a possibility to achieve it;
- V2G as a rising technology.

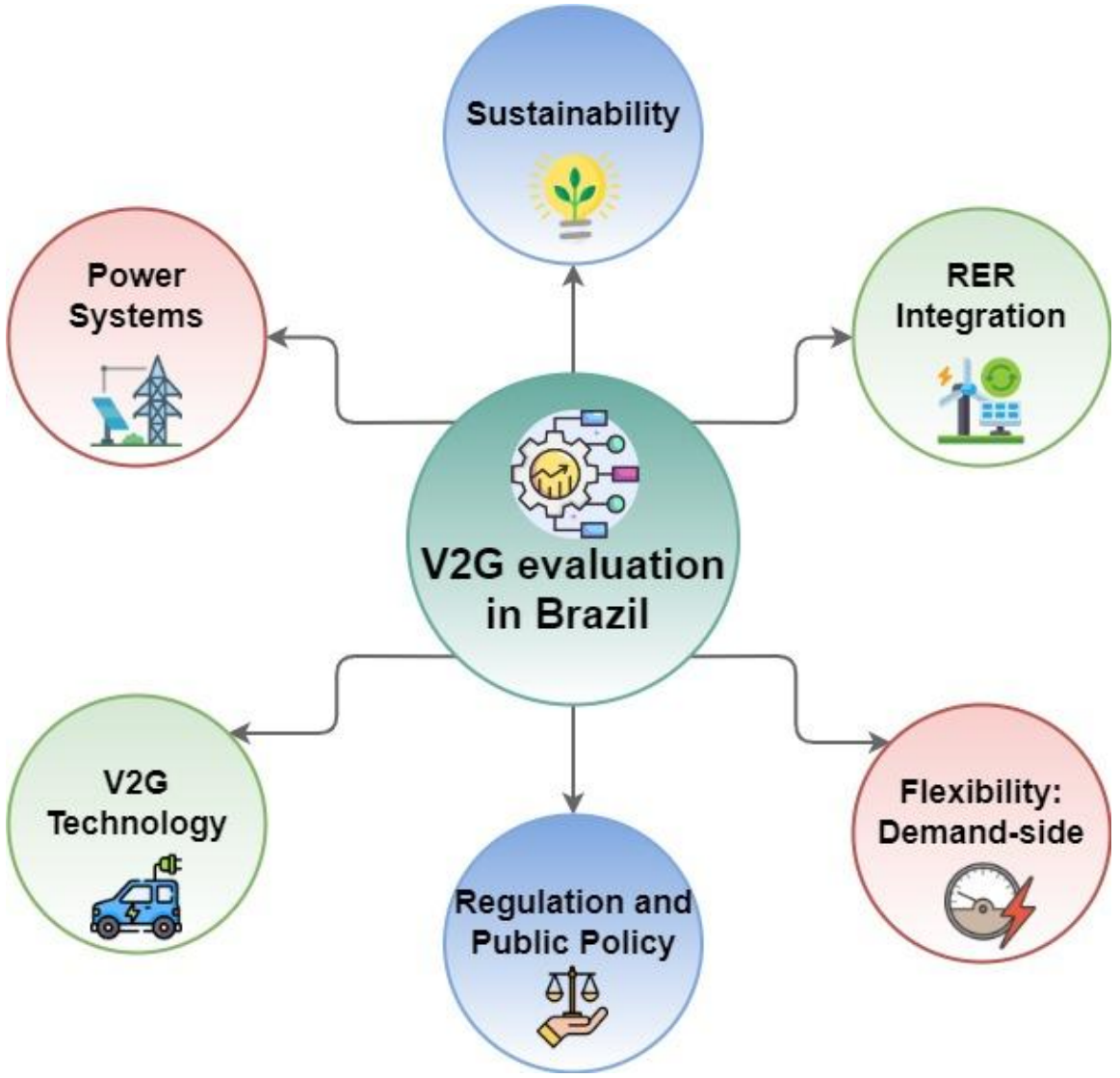
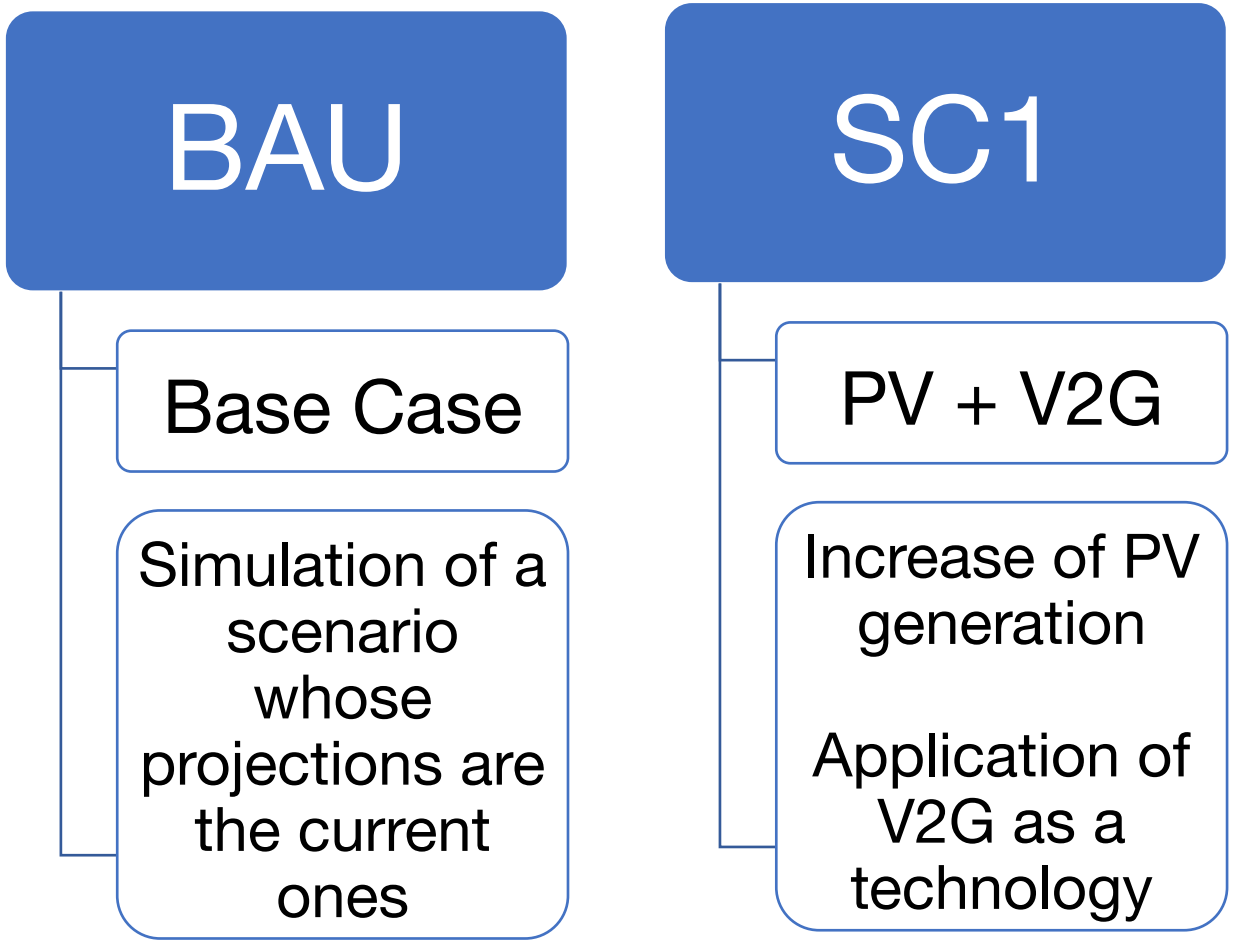


Figure 1: Simplified V2G assessment diagram in Brazil.

Research questions

1. Could V2G technology support energy transitions in Brazil?
2. How much capital costs to cope with different scenarios?
3. What potential advantages does V2G offer in the Brazilian context?

Scenarios


BAU
Base Case
Simulation of a scenario whose projections are the current ones
SC1
PV + V2G
Increase of PV generation
Application of V2G as a technology

Results

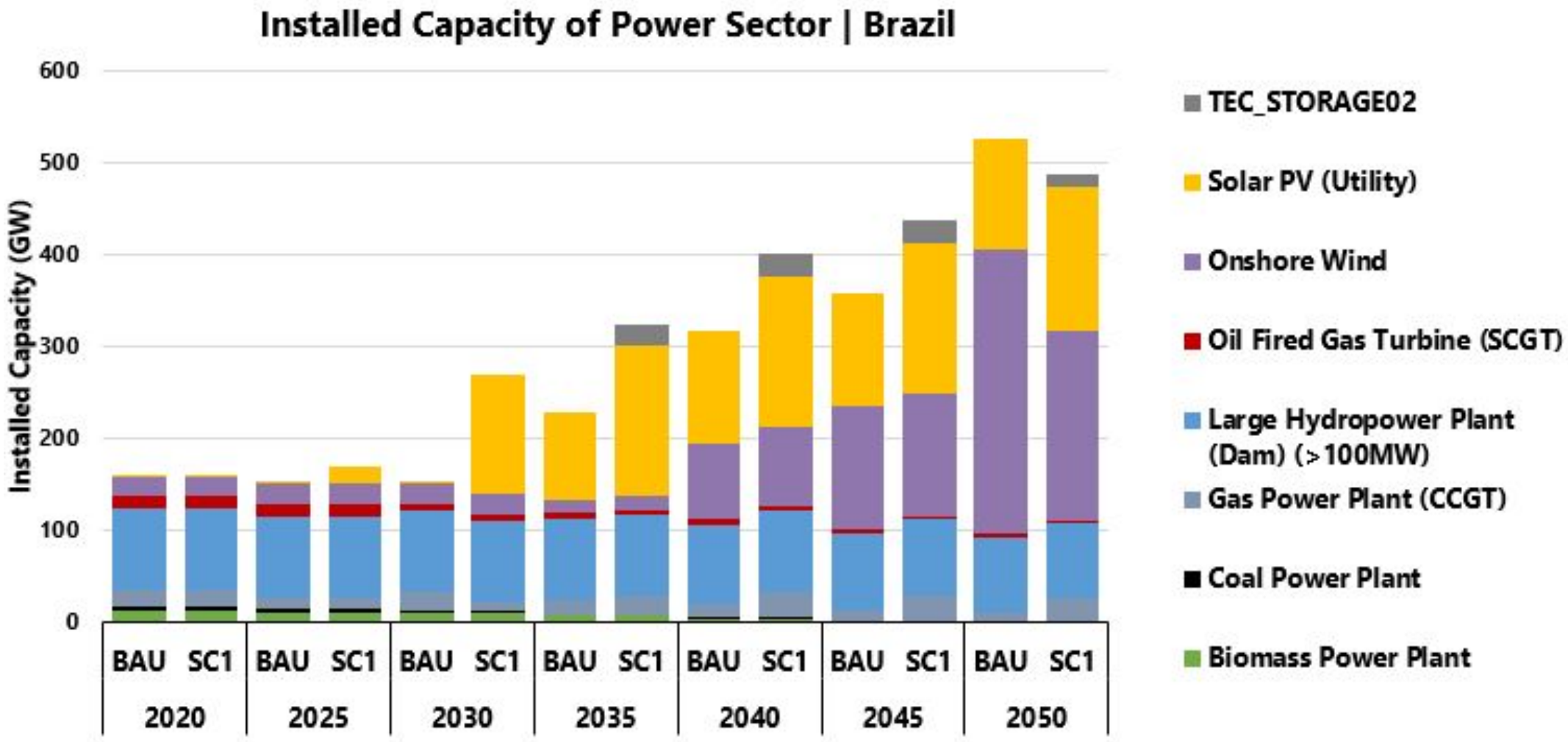


Figure 3: Installed capacity of power sector in Brazil.

Results

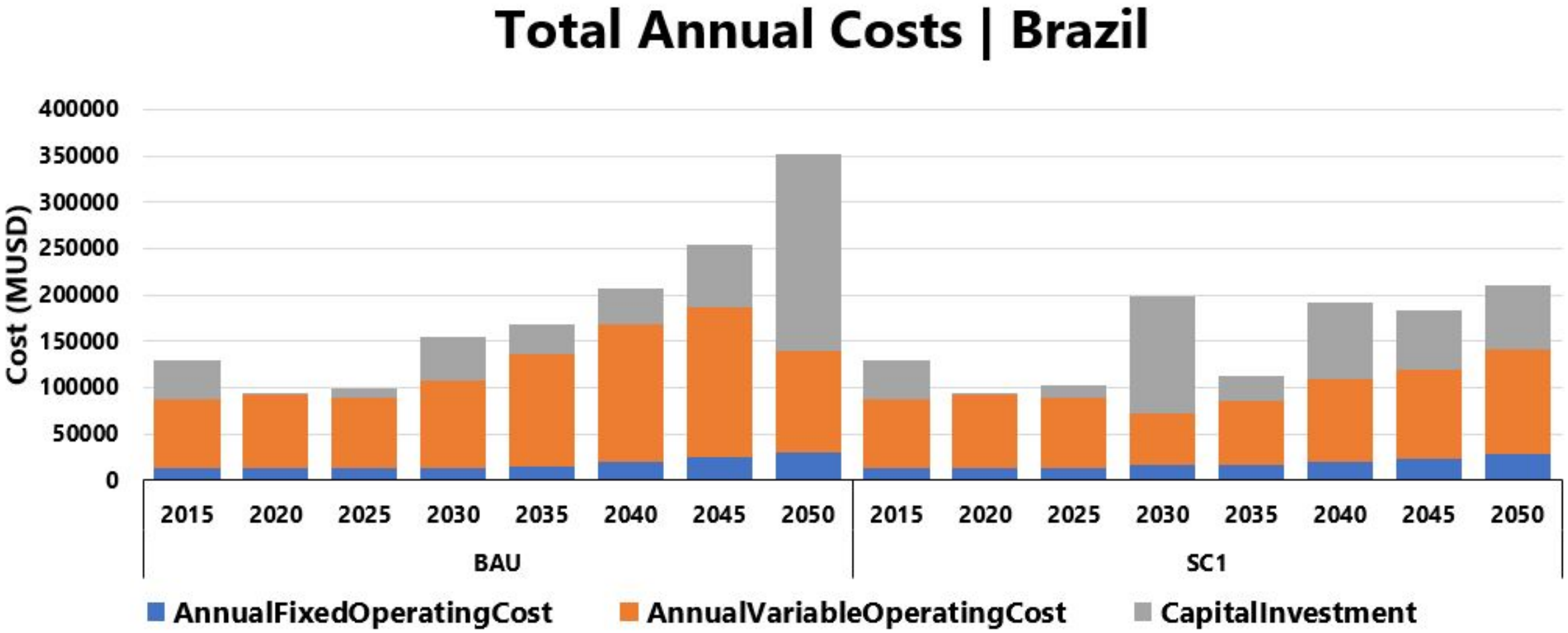


Figure 4: Total Annual Costs in Brazil.

Results

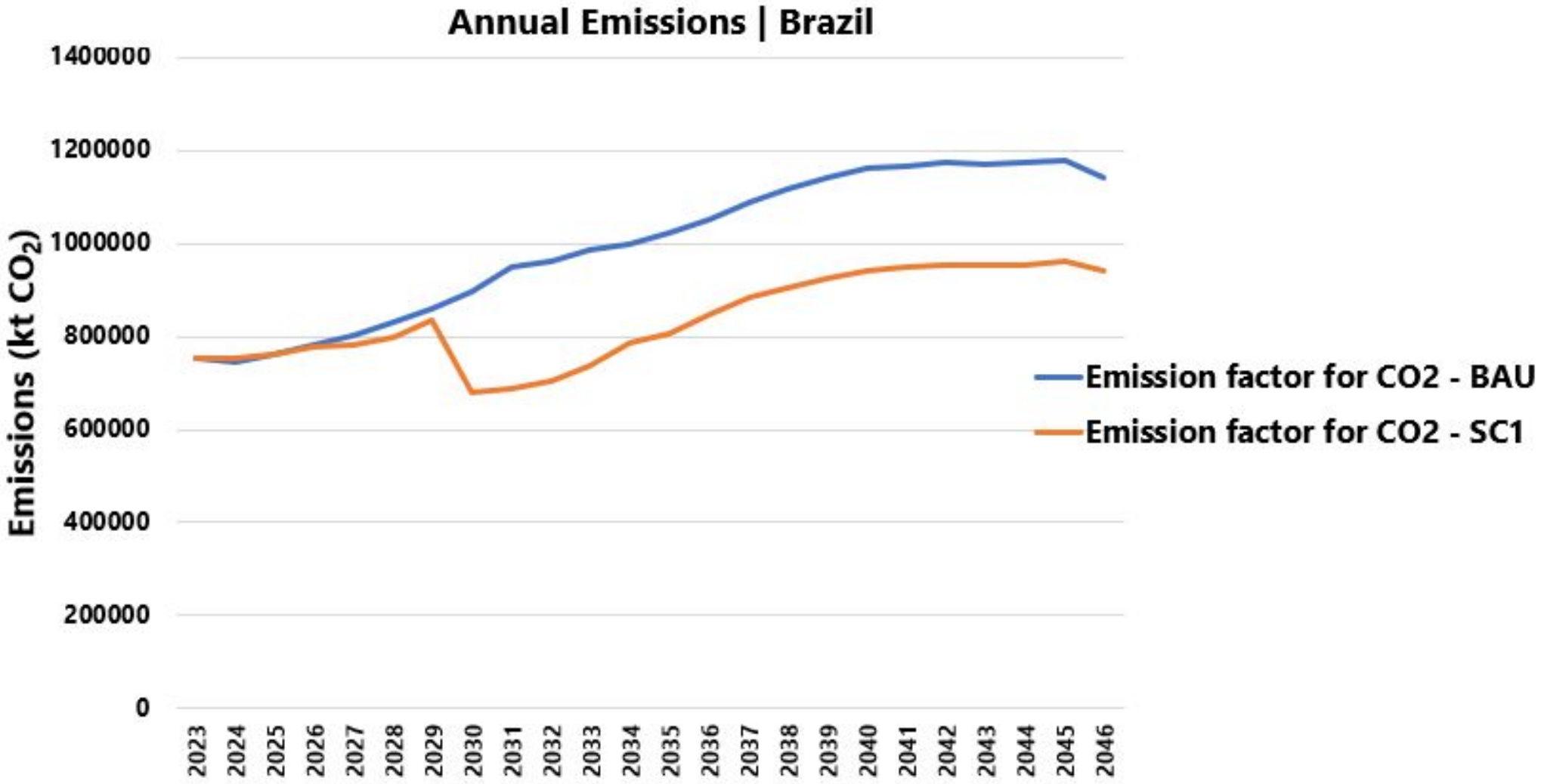


Figure 5: Annual Emissions in Brazil.

Conclusions

Investments in PV + V2G can be an economic alternative

V2G can be a good alternative to deal with the PV surplus energy

Emissions are reduced - achieving climate changes objectives

Costs are lesser due to PV + V2G and they are more distributed