



# ECOWAS SUSTAINABLE ENERGY FORUM ESEF 2024

**Towards a Just Energy Transition in the ECOWAS Region**

## Trações Elétricas de Cabo Verde: Powering Cabo Verde's Electric Future

Exhibition Centre - Abidjan, Côte d'Ivoire  
November 28 - 29, 2024

[www.ecreee.org](http://www.ecreee.org)

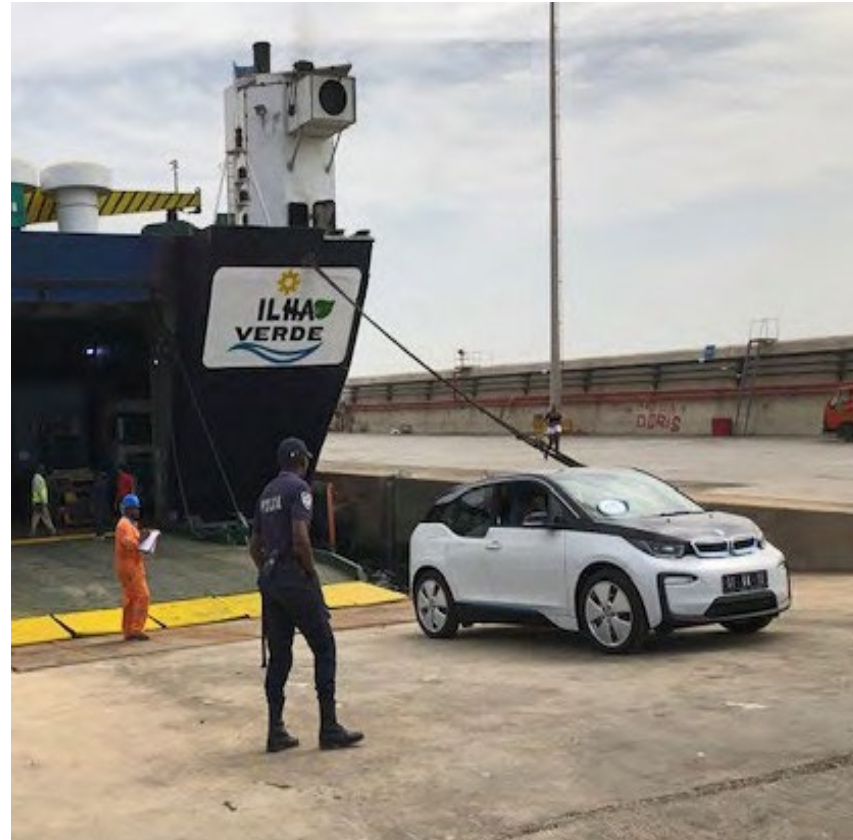




# Introduction and Background



- Electric Mobility Action Plan
- Pilot Experience
- First vehicles 100% electric in Cabo Verde in 07/02/2019



# Concession – National Infrastructure

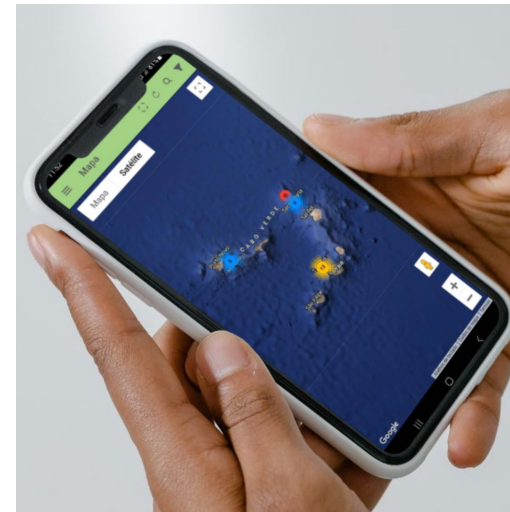
- Modality: Build, Own, Operate, Transfer (B.O.O.T.)
- 40 charging stations for EV's
- 9 Islands
- Kick-off: 10th July, 2023



# Current Scenario – How it's going



- **EV Charging Network:** Our company operates a network of over 40 strategically placed charging stations across 9 different islands, designed to support all urban areas and municipalities in the country.
- **Technology:** Semi-fast and fast chargers to reduce charging times and support the shift away from thermal-engine vehicles.
- **Fully Digitalized System:** Allows users to locate chargers, check availability, register, charge, and online payment.
- **Scalability:** Ability to expand and meet future demands, aiming to contribute toward Cabo Verde's goal of a fully operational National Charging Infrastructure by 2030
- **Regional Potential:** Solution can be replicated in African countries that are in the early stages of mobility transition.



# Current Scenario – Mixed infrastructure



- **Charger Type: Semi-fast**
- Plug type: Type 2/Mennekes
- Power per plug: 22 kW
- Protocol: OCPP 1.6 JSON
- Ethernet/4G communication



# Current Scenario – Mixed infrastructure



- **Charger Type: Fast**
- Plug type: Type 2/CCS/CHAdeMO
- Power per plug: 22kW / 50kW
- Protocol: OCPP 1.6 JSON
- Ethernet/4G communication



# Current Scenario – Digital component



TECV Mobile app



Download the app here!





# Current Scenario – Digital component



**Ponto de carga 11351 - Kebra Canela (INGETEAM)**  
Ligação: ● Potência: 72.1 kW (104.0 A)

Tomada	Status	Controles
Tomada: 1 Type-2 F Disponível	Potência média: 6374 W Iniciar sessão: 17/11/2024 21:48:23 Fim da carga: 17/11/2024 22:07:08 Fim da sessão: 17/11/2024 22:07:08 Potência atual: 0 W Intensidade atual: 0 A Energia: 1992 Wh Duração: 18 mins Preço da sessão: 96.49 )	Permitir ligação, Permitir desconexão, Desativar
Tomada: 2 CCS Combo (DC) A carregar	Potência média: 32099 W Iniciar sessão: 18/11/2024 17:11:01 Fim da carga: Fim da sessão: Potência atual: 47444 W Intensidade atual: 71 A Energia: 5350 Wh Duração: 10 mins Preço da sessão: 0.0	Permitir ligação, Permitir desconexão, Desativar
Tomada: 3 CHADEMO (DC) Disponível	Potência média: 36182 W Iniciar sessão: 18/11/2024 12:22:57 Fim da carga: 18/11/2024 13:31:45 Fim da sessão: 18/11/2024 13:31:45 Potência atual: 0 W Intensidade atual: 0 A Energia: 41489 Wh Duração: 68 mins Preço da sessão: 0.0 )	Permitir ligação, Permitir desconexão, Desativar

- Software integration: Real-time monitoring, online payments, full control of the chargers remotely, user control, SaaS (software as a service)

**Dashboard Estado**

Mapa | Satélite

● Disponível ● A carregar ● Reservado ● Fora de serviço ● Erro

Ponto de carga	Status	Controles
Ponto de carga 10654 - Rua 15 de Agosto (CIRCUTOR) Santa Maria, Sai - 00000 - Santa Maria Potência: 22.2 kW (32.0 A) Ligação: ●	Tomada: 1: Disponível (TYPE-2-F) Tomada: 2: Disponível (TYPE-2-F)	
Ponto de carga 11334 - Shell Tarrafal (INGETEAM) Tarrafal, Santiago - 00000 - Cabo Verde Potência: 55.4 kW (80.0 A) Ligação: ●	Tomada: 1: Disponível (TYPE-2-F) Tomada: 2: Disponível (CCS)	

**Send commands**  
Rua 15 de Agosto (CIRCUTOR)

Allow unplug (selected) | Socket: 1

- Allow plug
- Stop charge
- Enable
- Disable
- Soft Reset
- Charger Reset
- Update Firmware
- Send Local List
- Drop Local List
- Clear Cache
- Get Diagnostics

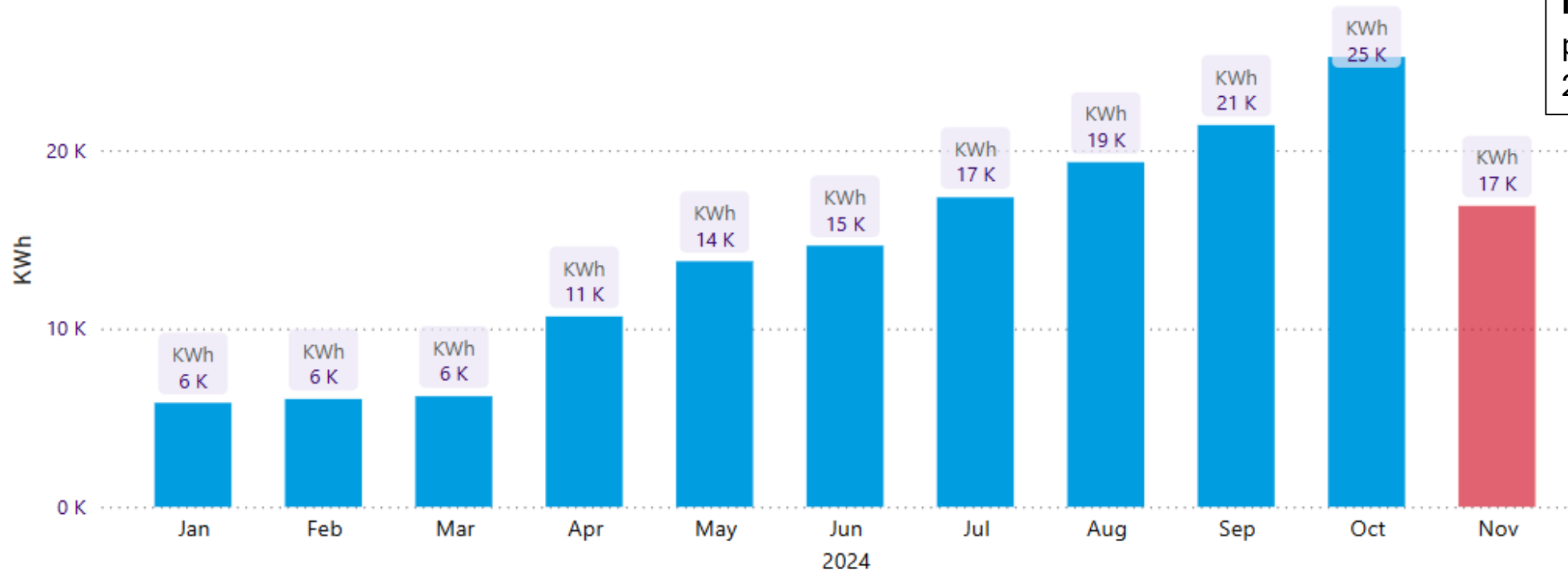
Model: Smart  
Power: 22.2 kW (32.0 A) - Triphasic  
Address Santa Maria, Sai - 00000 - Santa Maria  
Location: PM\_SL01S  
Charger Connection: ✔ (Open)  
Charger uptime: Last 24h: ● 100.0% | Last week: ● 99.67%

- Tarriff integration per charger, per plug, per time of the day, minute, kWh, usage



# Lessons learned – Planning the future!

- **Installed Base:** Over 45 chargers currently in operation across all the Island of Cabo Verde.
- **Active Users:** More than 200 regular users benefiting from reliable and accessible charging services.
- **Growth in Usage:** Monthly charging sessions growing at 11% month-over-month.
- **Growth in kWh:** Monthly energy (KWh) provided growing at 19% month-over-month.
- **Most used charger:** Fast charger 50 kW in Santiago Island



**Note:** November is predicted to surpass 26.000 kWh

# Lessons learned – Planning the future!

## Most used charger and why

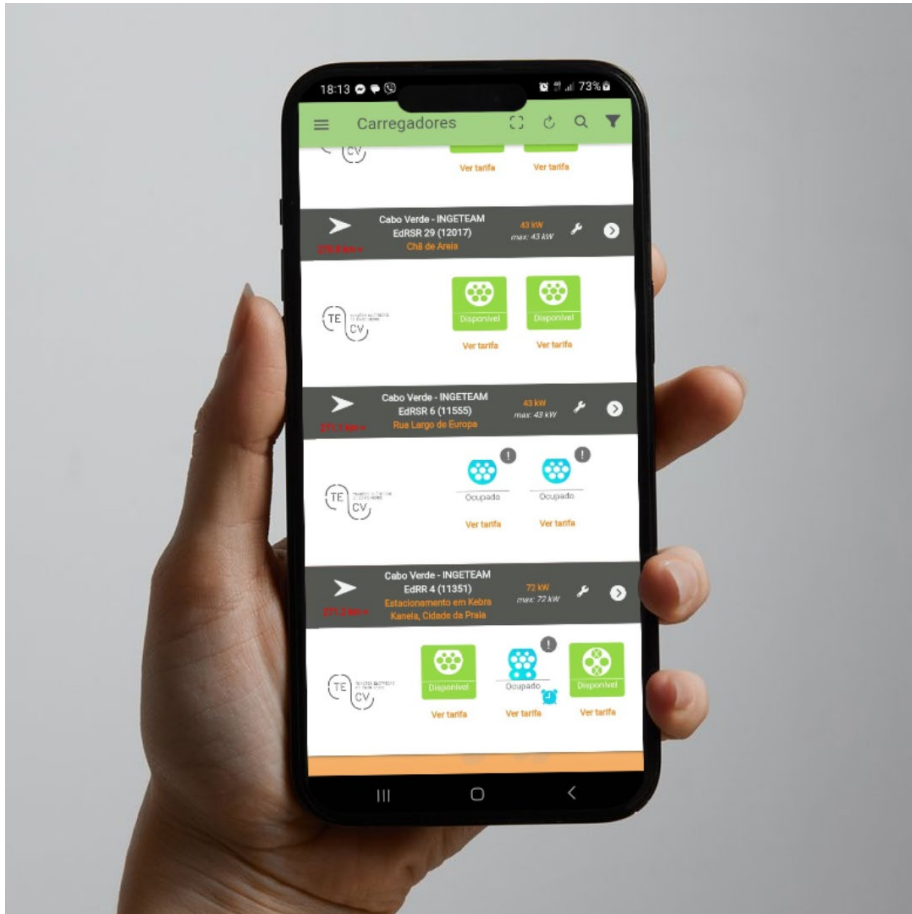


- Fast charger installed in Cabo Verde
  - More than 2 500 charging sessions
  - 17 kWh per session average
  - Over 45 MWh supplied
  - 52 minutes per session average
  - Close to restaurants and beach



# Lessons learned – Planning the future!

## APP VS Chip RFID

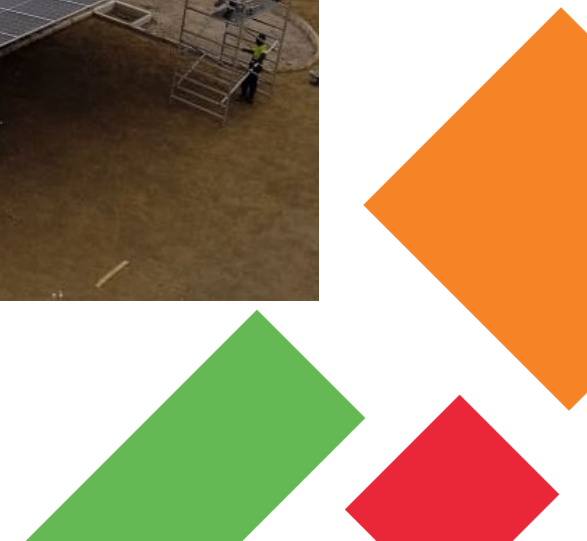


- APP usage: 10%
- Chip RFID usage: 90%



# Lessons learned – Planning the future!

## Solar integration and tariff reduction



# Lessons learned – Planning the future!

## Expansion



## Grid friendly





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