



# Interventions for Electric Vehicle Uptake in Tonga

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# Background and rationale

# Castalia compared the economics of five vehicle types

ICE light pick-up truck:  
Toyota Hilux



- 5 passengers
- TOP 75,132 purchase cost

EV light pick-up truck:  
LDV eT60



- 5 passengers
- TOP 116,950

Second-hand ICE four-wheeler: Nissan Altima



- 5 passengers
- TOP 17,050

Second-hand EV four-wheeler: Nissan Leaf



- 5 passengers
- TOP 14,620

Mini EV: Wuling  
Hongguang



- 3 passengers
- TOP 11,600

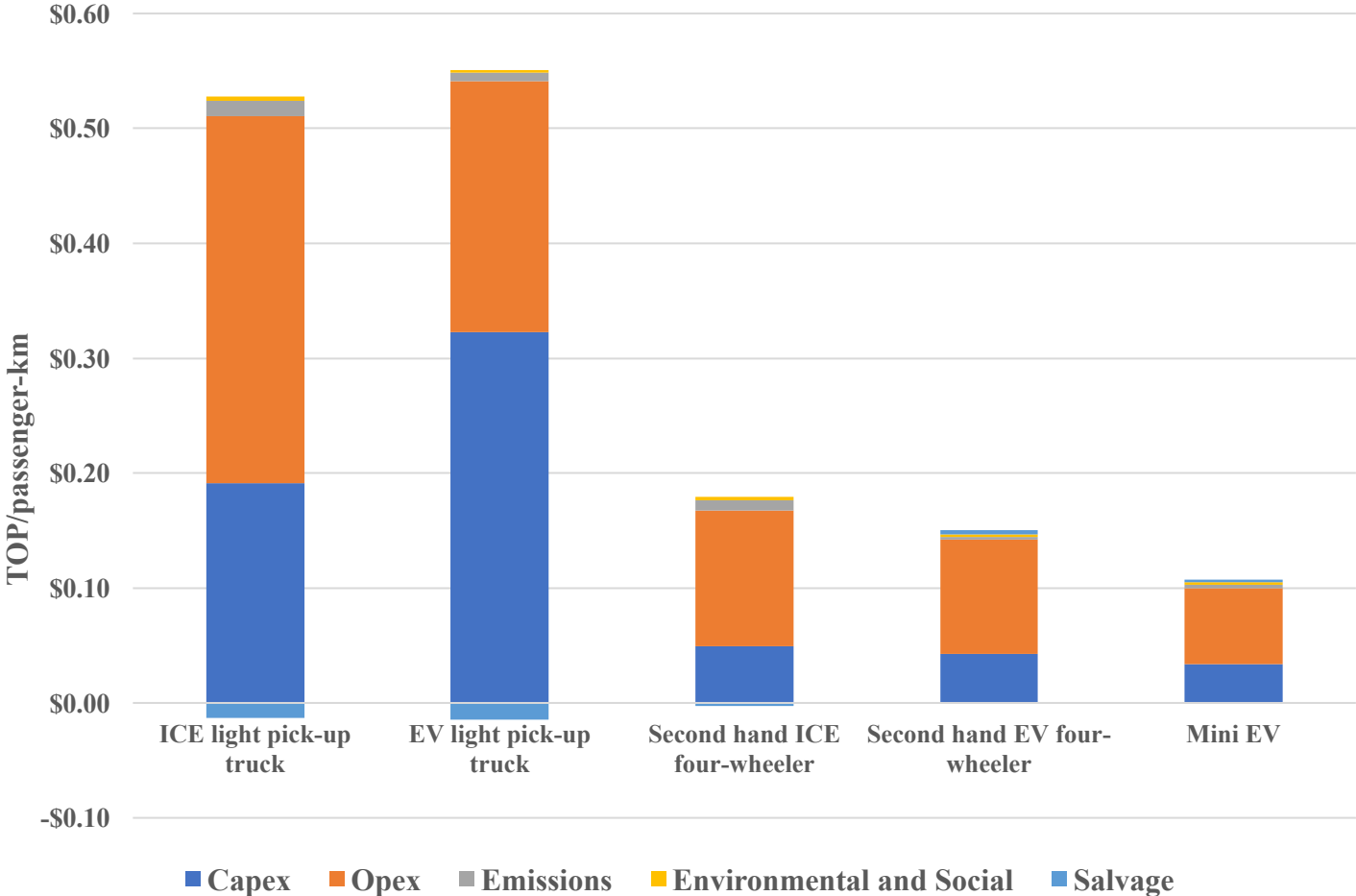
42% of Tonga's land transport fleet

## EVs are cheaper than ICEVs for a range of uses in Tonga

	Pick-up truck		Second-hand four-wheeler		Mini
	ICE	EV	ICE	EV	EV
<b>Government</b> (3 passengers, 9,125km p.a.)	0.51	0.54	0.18	0.15	0.11
<b>Private</b> (1.5 passengers, 9,125km p.a.)	1.03	1.07	0.35	0.30	0.21
<b>Taxi</b> (2.5 passengers, 18,250km p.a.)	0.45	0.37	0.170	0.175	0.10

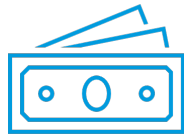
Values shown are the total costs of ownership (TCO) in TOP per passenger-kilometre (ps-km)

# Total cost of ownership for government vehicles



# EV uptake is going to happen and needs a planned approach

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Because of the cost savings, EV uptake will happen in Tonga



This can be planned or unplanned uptake

Unplanned EV uptake will lead to higher transport costs and higher power costs for Tonga

Carefully planned EV uptake can minimize transport and power costs for Tonga

# Potential interventions and incentives

# Summary of potential interventions and incentives

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Least  
interventionist

Most  
interventionist



- Awareness and promotion campaign
- EV and charging infrastructure standards
- Public procurement campaign
- Accelerated charging infrastructure
- Time of use tariffs
- Tax and levy incentives
- Feebate system



# Awareness and promotion campaign



**What** → Engage the public to improve awareness and confidence in EVs, to dispel myths around costs and reliability and highlight their economic, environmental, and technological advantages over ICEVs

**Why** → There is a lack of public awareness of the use and benefits of EVs



Conducted public EV perception surveys and hosts free EV showcases



Public communication materials  
Train team on communicating materials  
Train team on technical and practical fundamentals of EVs



Hosts an annual EV conference



- Tonga's national budget
- TA funding from development partners

# EV and charging infrastructure standards



**What** → Draft standards for EVs and charging infrastructure using PRIF's EV standards. Include import regulations, battery standards, charging standards, shipping policies, and first-response guidelines

**Why** → To instill public confidence, mitigate safety risks, and foster an efficient market by ensuring quality, reliability, and proper maintenance



Import standards:

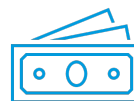
- 3-year age limit
- Battery status
- Active thermal management system



Use in-house or external legal drafters to translate the PRIF standards to Tonga's regulatory environment



Fuel efficiency marketing standards



- Tonga's national budget
- TA funding from development partners

# Public procurement campaign



Source: Matangi Tonga

**What** → Continue with the government's plan to electrify its fleet. This includes specifying which ministries and departments must purchase EVs over ICEVs

**Why** → Improves political awareness and introduces Tongan citizens to EVs



Has EVs for its PM and other senior ministers  
Incentivizes businesses to offer EVs to tourists



Engage experts to develop and evaluate procurement proposals



Mandates specified agencies to procure EVs over ICEVs



- TA funding from development partners
- Once operational, should deliver savings

# Accelerated charging infrastructure



**What** → Install one public charging station at the Prime Minister’s office and amend any regulatory barriers for charging infrastructure

**Why** → This will mitigate range anxiety for potential buyers



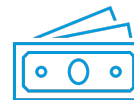
Supports and allows independent companies to operate charging infrastructure



Training on the charging infrastructure standards  
Train electrical contractors on charging infrastructure



Provides a free Level 2 EV charger upon EV purchase



- TA funding from development partners
- Business model for public use

# Time-of-use tariffs



**What** → Implement time-of-use (TOU) tariffs that charge different electricity tariffs based on the time of day the electricity is used. Combine this with managed charging capabilities

**Why** → To incentivize customers to shift electricity demand to periods that are beneficial to the grid



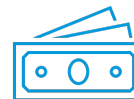
Some power retailers and utilities implement TOU tariffs



Technical assistance to develop a TOU tariff regime  
Develop public communication materials



Managed charging capabilities



- TA funding from partners
- Once established, should not impose additional cost

# Tax and levy incentives



Source: Matangi Tonga

**What** → Amend the Customs and Excise Management Act and the Traffic Regulations Act to reduce customs duties and registration fees relative to ICEVs

**Why** → Reduces costs for EV users relative to ICEVs



Reduced EV registration fees



Reduced EV import duties



Train staff on developing tax incentives for EV uptake



- Unlikely to require additional funding

# Feebate system



Source: whichcar.com

**What** → Develop a feebate system that provides direct rebates to lower the purchase price of new and used EVs. Fund the system with fees levied on the purchase of high emissions vehicles

**Why** → Reduces costs for EV users relative to ICEVs



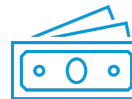
Have rebate schemes for EVs



Feebate system training material  
Public communication materials  
Train staff on implementing a feebate system



Has a rebate scheme for EV chargers



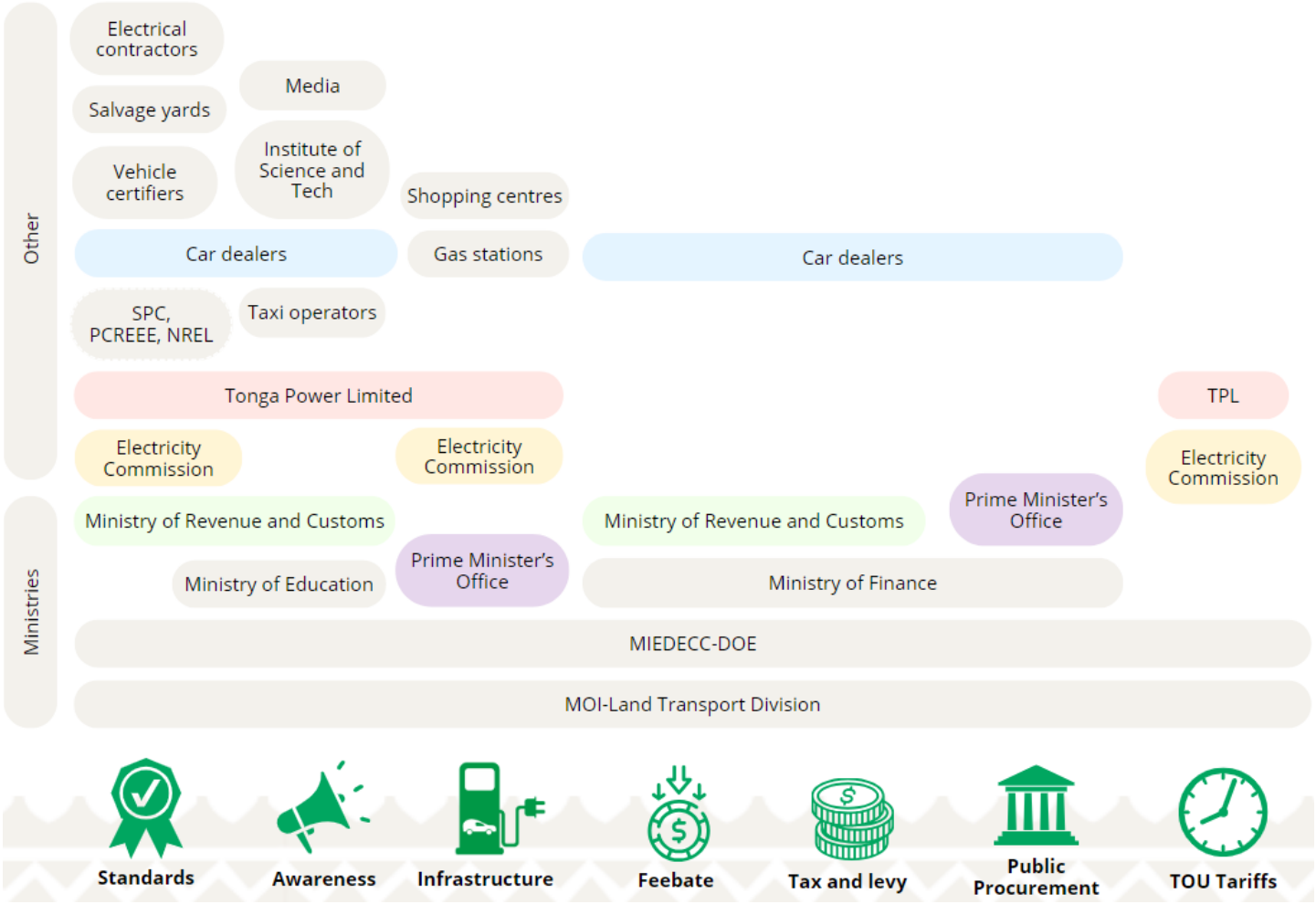
- Core MOI LTD budget
- Once operational, scheme should be cost-neutral

# Ranking interventions

	Total priority score	Potential to accelerate EV uptake	Political and cultural acceptance	Organizationally implementable
EV and charging infrastructure standards	3.9 ★★★★★	4	4	3.8
Awareness and promotion campaign	3.8 ★★★★★	5	3	3.4
Accelerated charging infrastructure	3.6 ★★★★★	4	4	2.8
Feebate system	3.3 ★★★★★	5	2	2.8
Tax and levy incentives	3.2 ★★★★★	3	3	3.5
Public procurement campaign	3.2 ★★★★★	4	3	2.6
Time of Use tariffs	2.5 ★★★★★	3	2	2.4



# Summary of interventions and key players





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