

POLICY RECOMMENDATION • LAO PDR

# National EV Transition Roadmap for Lao PDR

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*Reducing oil dependency, protecting the grid, and building a self-reliant economy through an “EV-enabling Laos” model*

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A 10-YEAR CONTROLLED TRANSITION • MAY 2026

# Laos imports oil. Laos produces electricity.

Lao PDR has a rare strategic advantage: every vehicle shifted from gasoline or diesel to electricity keeps transport spending inside the domestic economy, reduces exposure to global oil prices, and puts domestic hydropower to work.

EV transition is not an immediate cure for current oil demand. Existing ICE vehicles will continue to operate for years. The real objective is to bend the future demand curve by redirecting new vehicle imports and high-usage segments toward EVs.



*EV transition should not be sold as eliminating today's oil demand. Its true value is slowing the growth of tomorrow's demand.*

Policy thesis

# The market is already moving.



**15,500**

EV cars

imported into Laos as of April 2026



**~1,000**

EVs / mo

imported in April 2026 alone (6.5% of cumulative)



**77,000**

EVs by 2030

projected cumulative at 30% YoY growth



**330 GWh**

in 2030

~1.5% of projected national power generation

Sources: Lao import data (April 2026); LAOEV/LOCA infrastructure data; oil-demand and electricity projections at data.laoev.com.

# Two energy systems. Very different economics.



Petroleum fuel

## 100% imported

- Cash leaves the economy with every liter
- Prices set by global oil markets
- No domestic value-chain spillover
- Vulnerable to FX shocks and supply shocks

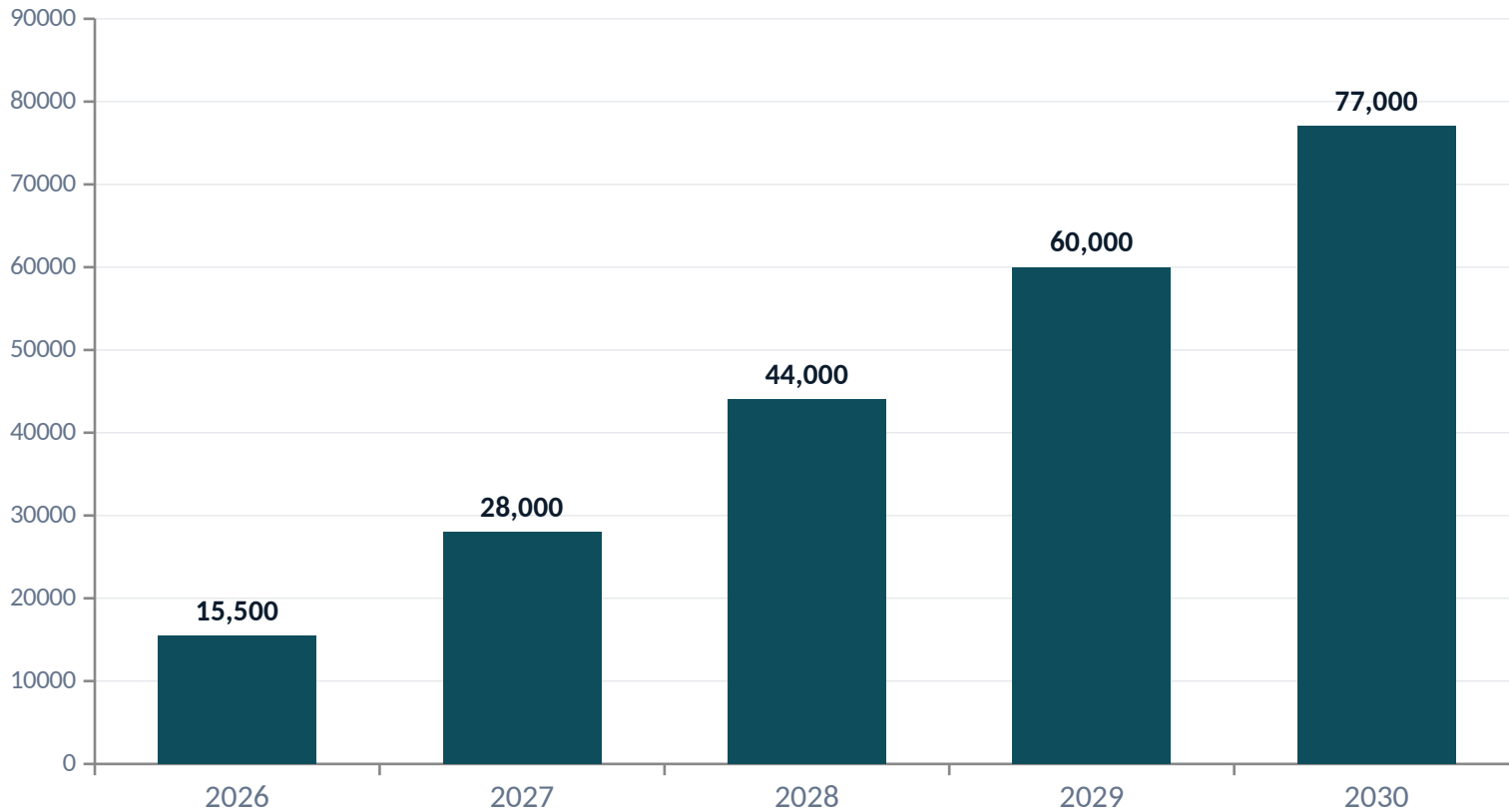


Domestic electricity

## Largely hydropower

- Transport spending stays inside Laos
- Generation already exceeds domestic demand
- Enables new industries: charging, software, recycling
- Stable, locally controlled energy supply

# From 15,500 today to ~77,000 EVs by 2030.



## WHAT THIS MEANS

**~163M**

liters of future oil demand prevented annually by 2030

**39%**

projected ICE market share by 2030 — PHEV / EREV likely absorb part of the rest

# Redirect the market without banning it.

A sudden ICE ban would damage revenue, anger consumers, and incentivize smuggling. Four phased levers achieve the same outcome while giving the market time to adapt.



Lever 1

## EV excise tax schedule

Gradually step up from ~3% today to 5%, 10%, 15%, 20% over 5-10 years. Creates a “buy now” incentive.



Lever 2

## ICE tax increase

Progressively raise ICE taxes on the same timetable so the relative price of EVs keeps falling.



Lever 3

## ICE import quota

Cap the volume of ICE units each distributor may import per year — a soft brake, not a ban.



Lever 4

## EV import ratio

Require existing ICE distributors to import a minimum share of EVs to keep their ICE quota.

# The bottleneck is the street, not the dam.

ONLY

~1.5%

*of projected 2030 national generation is needed to power 77,000 EVs.*

National generation is not the problem.

## THE REAL RISK

### Uncontrolled home charging on shared neighborhood transformers



Voltage drops on residential feeders



Transformer overload as neighbors charge simultaneously



Unstable charging and damage to home appliances



Negative public perception turning consumers off EVs

# 146 stations — but coverage is uneven.

# 146

charging stations nationwide • end of April 2026

## LOCA

# 18

provinces

*Only nationwide operator*

## Bluedot

# 11

provinces

*Strong regional builder*

## Others

# VTE

concentrated

*Mostly large urban stations*

### POLICY READING

## Measure coverage, not station count.

- A few large stations in Vientiane don't solve infrastructure access in provinces.
- Capital-concentrated stations fail to relieve home-charging pressure on the 0.4 kV grid.
- Reward coverage quality — grid priority, solar offset eligibility, and financing should go to distributed, reliable networks.

# Many small stations beat one big station.

Public charging should be convenient enough that users do not depend on home charging. Lao behavior — single-family homes spread over wide areas — makes this critical.



Residential clusters



Markets



Offices



Hotels & tourism



Transport hubs



Provincial towns



Highway corridors



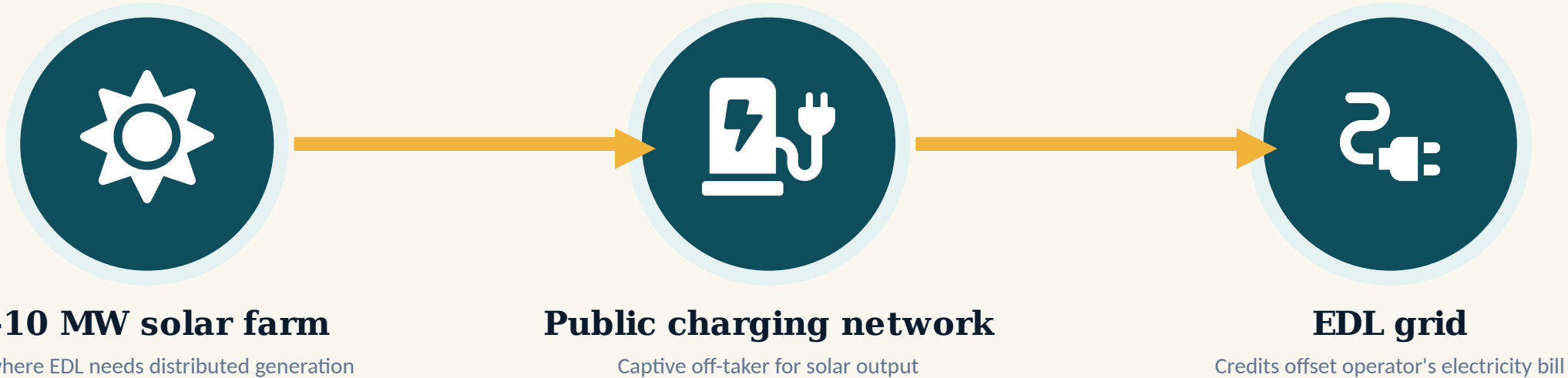
Lower-density areas

## MARKET EVIDENCE

*“Charging becomes part of daily routine.”*

LOCA operating data shows small-to-medium stations distributed around the city outperform isolated centralized stations — matching Lao consumer behavior.

# A circular financing model.



## Why offset, not direct payment?

Solar projects struggle when bankability depends on EDL cash-payment capacity. Offset uses charging-station electricity consumption as the credit. EDL avoids new direct investment, solar developers bypass off-taker risk, and operators improve charging-station margins. The offset ratio need not be 1:1 — it can be designed to protect EDL.

# Three standards. One open market.

*National standards prevent vendor lock-in, allow sourcing from multiple markets, and let Lao firms build local software on open protocols.*



DC FAST

## CCS2

Combined Charging System 2 for high-power DC fast charging.



AC

## Type 2

Standard AC connector across passenger and light commercial vehicles.



SOFTWARE

## OCPP

Open protocol for all public stations — enables Lao-built monitoring, payments, and grid coordination.

**Bonus rule:** *EV telemetry, location, and behavioral data generated in Laos should be stored in Laos or on Lao-controlled infrastructure where sensitive.*

# Don't let Laos become a dumping ground.



## After-sales requirement

Before granting import approval, require: 10-year spare-parts plan, battery warranty, certified technicians, diagnostic tools, recall process, and local service network.



## EV certification courses

Short, practical training for existing mechanics in high-voltage safety, battery diagnostics, charging systems, motors, cooling, and software — not new degree programs.



## Data sovereignty

Vehicle data generated in Laos (especially for government, logistics, border, and critical-infrastructure use) stored in Laos or under Lao-controlled infrastructure.



## Open standards enforced

CCS2 / Type 2 / OCPP adoption prevents single-ecosystem lock-in and lets Lao software developers build on top of every station.

# Laos already builds many EV components.

Companies in Lao SEZs already produce practical EV-relevant components. The country isn't starting from zero — the foundation for an EV component industry already exists.

## PRINCIPLE

*Gradually increase local value creation — don't try to replace all imported materials at once. Start with assembly, testing, quality control, customization, and regional export.*

## WHAT LAOS CAN ALREADY MAKE



**Wiring harnesses**



**Transformers**



**Electrical panels**



**Charging cabinets**



**Cable assemblies**



**Installation parts**

# Two realistic value-add bets for Laos.



BET 1

## Mineral circularity

- **Responsible mining + domestic processing**

Process Lao-mined minerals locally instead of exporting only raw ore.

- **Battery & mineral recycling hub**

Allow regional battery materials to be collected, imported, inspected, and recycled in Laos — enough volume to justify commercial-scale facilities.



BET 2

## Local EV software

EV infrastructure needs charger monitoring, payment integration, energy management, predictive maintenance, customer apps, fleet management, and data reporting.

### Why software is realistic

*Software doesn't need a heavy industrial base. AI tools let Lao developers build localized platforms — Lao language, Lao payments, EDL requirements — at lower cost.*

# Foundation → Acceleration → Maturity.

YEARS 1 - 2

## Foundation

- Announce EV and ICE tax schedules
- Adopt CCS2, Type 2, OCPP
- Introduce importer service requirements
- Design ICE quota and EV import-ratio rules
- Identify distributed charging locations
- Design the solar-offset framework

YEARS 3 - 5

## Acceleration

- Expand small-to-medium stations across cities and provinces
- Enable project financing for charging infrastructure
- Pilot solar offsetting at scale
- Increase ICE quota restrictions
- Expand EV technician training
- Launch national EV data monitoring

YEARS 6 - 10

## Maturity

- Gradually raise EV excise tax as market matures
- Further reduce ICE quotas
- Expand to long-haul and heavy transport
- Develop battery recycling and second-life batteries
- Build local EV software and component industries
- Capture regional supply-chain export markets

FINAL POLICY MESSAGE

**Use EV transition to reduce future oil dependency, protect government revenue, strengthen the electricity grid, build local technical capacity, and secure national control over critical transport and energy infrastructure.**



**Attractive today**

Make EVs cheaper now while ICE gradually costs more.



**Convenient charging**

Distributed public stations, financed and solar-offset.



**Local value capture**

Components, recycling, and Lao-built EV software.