



The Department of National Defence

Electric Vehicle Supply Equipment



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Agenda

- Policy
- DND Fleet and Location
- Challenges
- Requirements
- Implementation
- Future Development



GOC Policies

- [Federal Sustainable Development Strategy](#)
- [TBS Greening Government Strategy](#)
- **“At least seventy-five per cent of new light-duty fleet vehicle purchases will be zero-emission vehicles (ZEVs) or hybrids, with the objective that the government’s light-duty fleet comprises 100% ZEVs by 2030. Priority is to be given to purchasing ZEVs.” TBS Greening Government Strategy**

Greening Government Strategy

The Greening Government Strategy is helping Canada to take action on climate change across federal operations. We are taking steps to reduce the environmental impacts across the Government of Canada. The science is clear: Human activities are driving unprecedented change in the Earth's climate. These pose significant risks that need to be addressed. We are taking our own operations with a new net-zero emissions by 2050 commitment, and expanding the scope of the target to include areas such as emissions related to national security, commuting, and procurement of goods and services.

Four key focus areas

- Green Fleets**
 Modernizing fleets with zero-emission vehicles and switching to lower carbon fuels; promoting and encouraging lower-carbon employee travel, and commuting.
- Property and Workplaces**
 Goals: constructing zero carbon buildings, maximizing energy efficiency in existing buildings, reducing water consumption, diverting waste from landfills, and minimizing ecosystem impacts.
- Climate-Resilient Services Operations**
 Anticipating future climate related hazards, risk management, and minimizing disruptions to our operations; nature-based solutions to protect physical assets from threats, such as flooding.
- Procurement of Goods and Services**
 Goals: transitioning to a net-zero, circular economy through green procurement and adopting clean technologies, products and services such as 100% clean electricity and low carbon building materials.

ACHIEVING A SUSTAINABLE FUTURE

FEDERAL SUSTAINABLE DEVELOPMENT STRATEGY

2022 TO 2026

DND Policies

- [Strong Secure Engaged \(SSE\)](#) 101 (p76, 112): Installing electric charging stations at new or retrofitted buildings for personnel to use with defence fleets and/or personal vehicles
- [Defence Energy and Environment Strategy](#) 100% of DND commercial light-duty vehicle fleet purchases will be zero-emission vehicles (ZEVs) or hybrid when available, with a ZEV procurement target of 50% by 2023



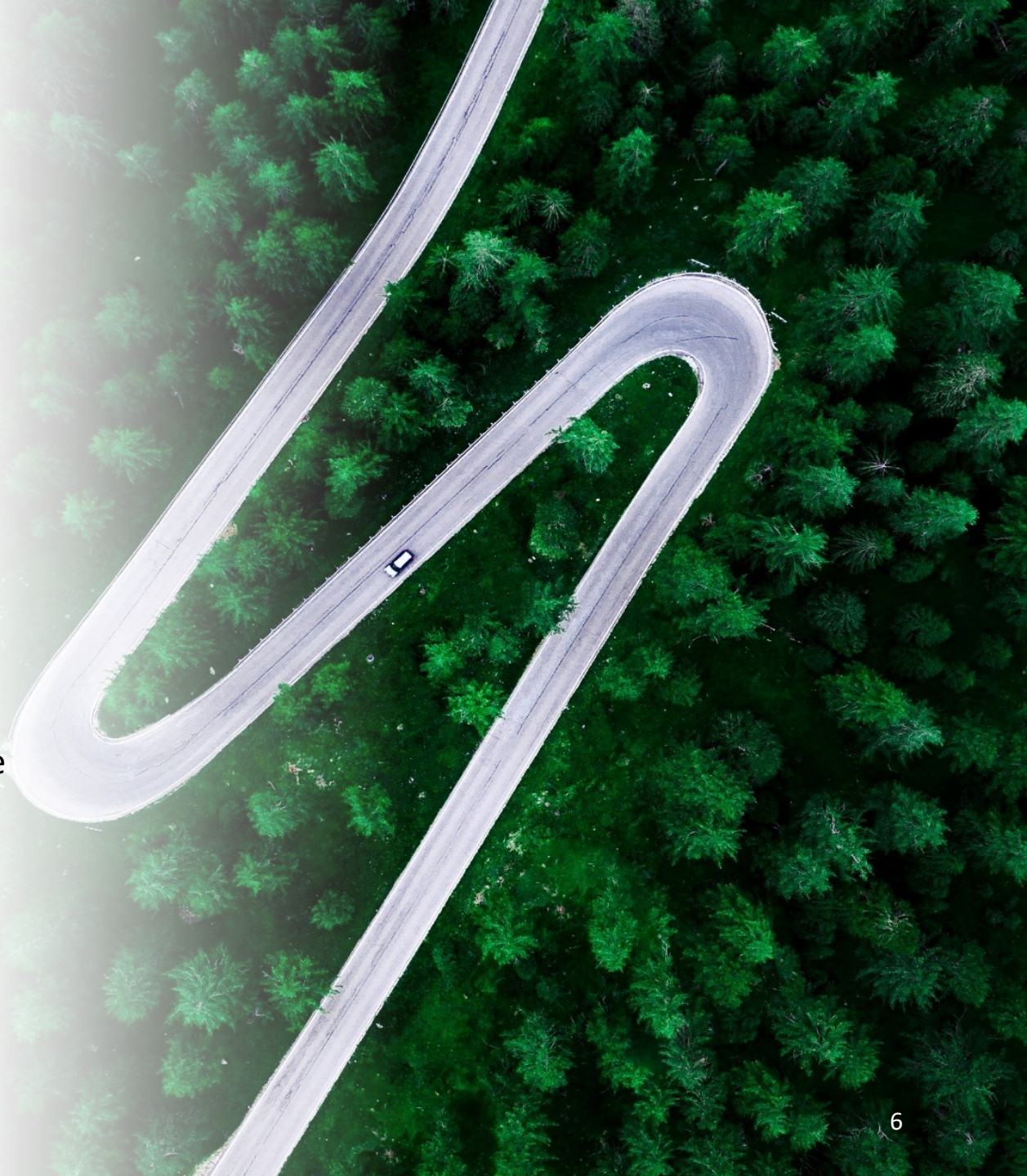
Internal Policies / Directives

- [Green Building Directive / Standard on Sustainability Requirements for Buildings](#)
- [SJS fleet policy](#)



DND's Light Duty Fleet

- 6,900 vehicles in total
 - 2,800 Trucks
 - 1400 Large SUVs/Vans
 - 800 Standard SUVs
 - 600 Sedans
- *NSS Fleet and the future





TBS Projected Vehicle Availability

Type	Subtype	Est % of Conv Fleet	Y2023	Y2024	Y2025	Y2026	Y2027	Y2028	Y2029	Y2030
Sedans	2WD (E.g. D30, D50, D85, D00)	6%	Med	High	High	High	High	High	High	High
Sedans	AWD (E.g. D01, D31)		Med	Med	High	High	High	High	High	High
Multipurpose	Compact 2WD (E.g. G40, H50)	3%	Med	High	High	High	High	High	High	High
Multipurpose	Compact 4x4/AWD (E.g. G41, H51)		Med	High	High	High	High	High	High	High
Multipurpose	Int. to Large 2WD (E.g. G20, H00, L40, L60)	18%	Med	Med	Med	High	High	High	High	High
Multipurpose	Int. to Large 4x4/AWD (E.g. G21, H01, L41, L61)		Med	Med	Med	High	High	High	High	High
Multipurpose	Full-size 4x4/AWD (E.g. L01, L71)	3%	Med	Med	Med	High	High	High	High	High
Passenger vans	4-8 Passengers (E.g. M31, M61, M30, M60)	14%	No	Low	Low	Med	Med	High	High	High
Passenger vans	12-15 Passengers (E.g. M50, M51)	1%	No	No	Low	Low	Med	Med	High	High
Cargo vans	Compact (E.g. T00)	1%	No	No	Low	Low	Med	Med	High	High
Cargo vans	Intermediate (E.g. T81, T80)	5%	Low	Med	Med	High	High	High	High	High
Cargo vans	Large (E.g. S70)	2%	No	Low	Low	Med	Med	High	High	High
Pick-up trucks	Mid-Size to 1/2-Ton 2WD (E.g. N20, N40, Q00, Q10)	20%	No	No	Low	Low	Med	Med	High	High
Pick-up trucks	Mid-Size to 1/2-Ton 4x4 (E.g. N21, N41, Q01, Q11)		Low	Low	Med	High	High	High	High	High
Pick-up trucks	3/4-Ton 2WD (E.g. Q20, Q80)	18%	No	No	No	Low	Low	Med	Med	High
Pick-up trucks	3/4-Ton 4x4 (E.g. Q21, Q81)		No	No	No	Low	Low	Med	Med	High
Pick-up trucks	1-Ton 2WD (E.g. Q40, Q90)	5%	No	No	No	Low	Low	Med	Med	High
Pick-up trucks	1-Ton 4x4 (E.g. Q4, Q91)		No	No	No	Low	Low	Med	Med	High
NSS - Special Services	Full-Size SUVs 4x4/AWD (E.g. L81R)	1%	No	No	Low	Low	Med	Med	High	High
NSS - Special Services	Pick-Up Trucks 4x4 (E.g. Q11R)		Low	Low	Med	High	High	High	High	High
NSS - Police Pursuit	Sedans 2WD (E.g. J00, K00)	2%	No	Low	Low	Med	Med	High	High	High
NSS - Police Pursuit	Sedans AWD (E.g. J01, K01)		No	Low	Low	Med	Med	High	High	High
NSS - Police Pursuit	Intermediate SUVs AWD (E.g. L51P, L71P)		No	No	Low	Low	Med	High	High	High
NSS - Police Pursuit	Full-size SUVs 4x4/AWD (E.g. L81P)		No	No	Low	Low	Med	Med	High	High
NSS - Police Pursuit	Pick-Up Trucks 4x4 (E.g. Q11P)	2%	No	No	Low	Low	Med	Med	High	High
		% of fleet with low	26%	39%	41%	27%	23%	0%	0%	0%
		% of fleet with med	30%	26%	47%	16%	20%	27%	23%	0%
		% of fleet with high	0	9%	9%	57%	57%	73%	77%	100%



Legend

- DND Property

RP Ops Regions

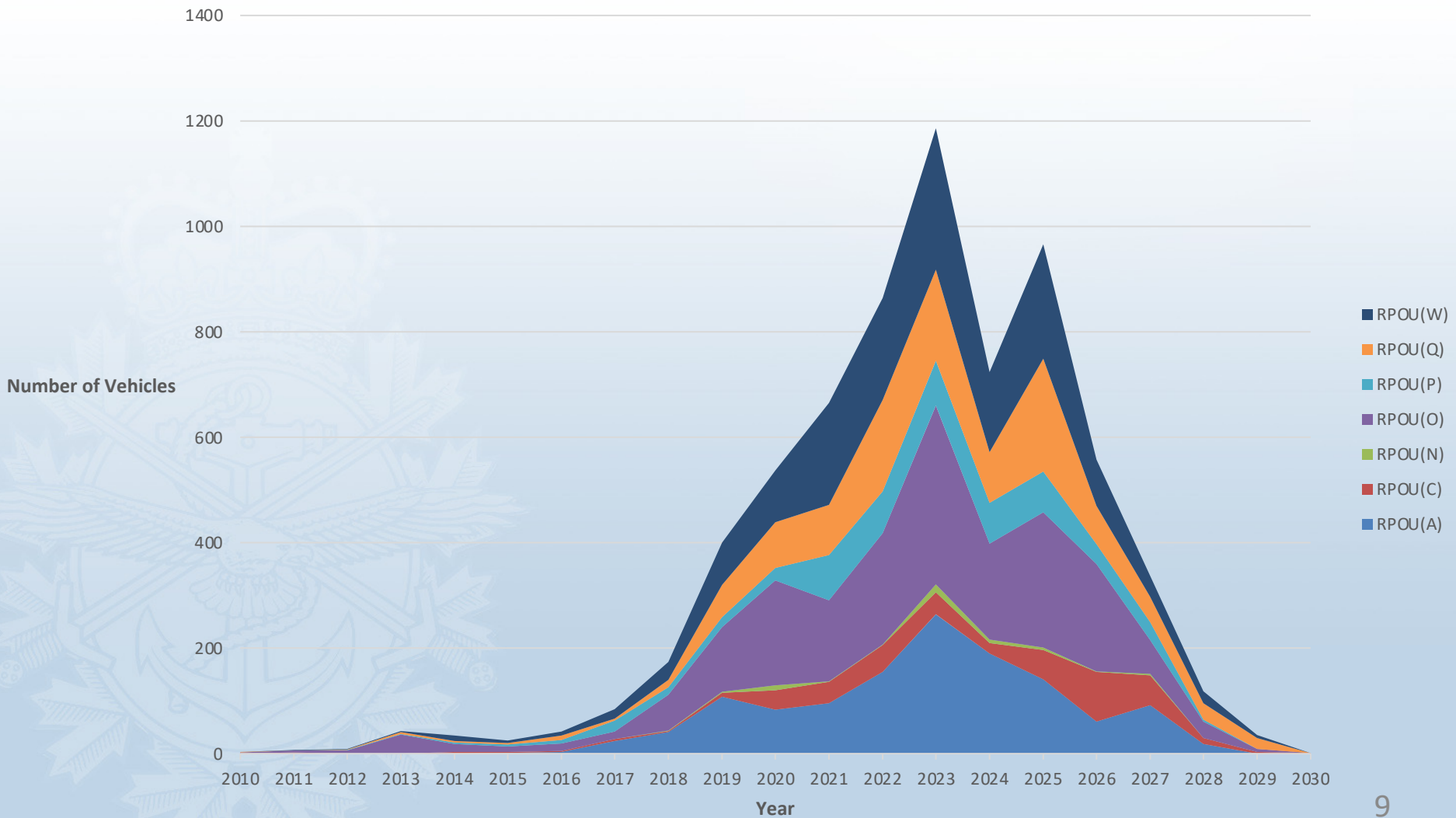
- Atlantic
- Central
- North
- Ontario
- Pacific
- Quebec
- West

Acronym	Complete Term
ASU	Area Support Unit
CFB	Canadian Forces Base
CFS	Canadian Forces Station
Det	Detachment
DND	Department of National Defence
FOL	Forward Operating Location
JTFN	Joint Task Force (North)
LFCA TC	Land Force Central Area Training Centre
NDHQ	National Defence Headquarters
RP OPS	Real Property Operations
WG	Wing

CAUTION: This graphic is for briefing purposes only and is not intended for navigation. The boundaries on this map must not be considered authoritative. Names on this map do not necessarily indicate official recognition of the political status of the areas concerned.



Anticipated Vehicle Lifecycles



DND

Organization

- Ownership
- Size & Scope
- Coordination
- Disruptive Technology



Challenges

- Networking / Security
- Fleet Requirements
- Fleet Coordination
- Policy evolution
- Employee vehicles
- Electrical Capacity
- Parking Limitations
- Austere Locations
- Arctic Climates



Risks - Environment

- [Contaminated Sites
Instruction – Soil
Management](#)



Risks - Fire

Ford F-150 Lightning electric truck fire highlights a growing EV risk

The images show smoke billowing from three tightly packed electric pickups in a Ford Motor holding Michigan.

- [Canadian Forces Fire Marshall \(CFFM\) Technical Advisory Bulletin](#)
 - Additional fire protection indoors



Requirements

A large military tank is being loaded into the cargo hold of a transport aircraft. The aircraft's cargo door is open, and the tank is positioned on a tarmac. The scene is set in a large hangar or airfield.

- Data accessibility
 - Networking
- Management Platform
- Payment processing
- Fleet accessibility / simplicity
- National EVSE interoperability
- Defining fleet requirements
- Uptime/maintenance
- Current industry practice / technology

Contracts

- Regional SOAs
 - Design
- National EVSE Vendor
 - Equipment
 - Software
 - Administration
 - Maintenance
- Regional QRTs
 - Construction



Implementation

- [Operations Plan](#)
 - Annex-H1
Sustainability
Direction
- [EVSE - Implementation Order](#)



Guidance



- Clearly identify EVSE is for DND fleet use only
- Anticipate 1 to 4 – charging stations to vehicles.
- Level 3 Charging limited to motor pools and strategic locations

NACS Charger

Company	Type	Announcement
Ford Motor Co	Automaker	May 2023
General Motors	Automaker	June 2023
Rivian Automotive	Automaker	June 2023
Volvo Cars	Automaker	June 2023
Polestar	Automaker	June 2023
Mercedes-Benz	Automaker	July 2023
Nissan	Automaker	July 2023
Honda Motor Co	Automaker	Sept 2023
Jaguar	Automaker	Sept 2023
Hyundai Motor Co	Automaker	Oct 2023
Kia America	Automaker	Oct 2023
SK Signet	Charger maker	June 2023
ChargePoint Holdings	Charger maker	June 2023
Blink Charging	Charger maker	June 2023
Tritium DCFC	Charger maker	June 2023
EVgo	Charger maker	June 2023
ABB Inc	Charger maker	June 2023
Wallbox	Charger maker	June 2023
Electrify America	Charger maker	June 2023
Fisker	EV developer	August 2023



Known Unknowns

- Personal Use Policy
- Military Accommodation Requirements
- EV purchases / availability
- Contaminated Soil
- Electrical Capacity
- Policy changes
- Cost Recovery

The Future

- Solid State Batteries
- Wider EV adoption
 - NSS Fleet
 - Personnel
 - Military equipment?

Charged

Toyota, Idemitsu tie up to mass-produce all-solid-state batteries

By Yuka Obayashi

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Aa



Government Community

- TBS
- NRCan
- PSPC
- AAFC
- CFIA
- ECCC
- DFO
- ISC
- ISED
- PC
- TC
- RCMP



Questions?

