The global transition to Cleaner Vehicles

Matteo Craglia

15th June 2022
About the International Transport Forum

Intergovernmental organisation, OECD Framework but 64 member countries

- Only global body covering all transport modes

Annual Summit, largest gathering of transport ministers

Act as an impartial think tank for transport policy

- Specific case studies and reports (over 60 per year)
- Modelling, data and statistics
- Collaborative projects
How serious are countries about decarbonising transport?

Our Transport NDC Tracker monitors how transport appears in countries' decarbonisation commitments. Do countries mention transport in their "Nationally Determined Contributions" (NDCs)? Have they included transport decarbonisation measures? And how many have set concrete CO2-reduction targets for transport? The Transport NDC Tracker is updated on the first Monday of each month.

- 98% of NDCs mention transport
- 81% of NDCs include transport measures
- 17% of NDCs set CO2 reduction targets

Find out more: https://www.itf-oecd.org/ndc-tracker/en
Electrification cuts emissions for cars and heavy-duty vehicles, with highest savings for battery electric vehicles.

Find out more: [https://www.itf-oecd.org/cleaner-vehicles](https://www.itf-oecd.org/cleaner-vehicles)
Projections for future market uptake

Share of electric vehicles in global passenger car sales

General consensus points to a strong outlook for EVs

Find out more: https://www.itf-oecd.org/cleaner-vehicles
Policies that drive market growth for cleaner vehicles

- Technical standards and regulations
- Clearly communicated policy vision with key targets
- An enabling environment on energy and carbon taxes
- Ambitious public procurement programmes
- Economic incentives
- Enforcing regulatory requirements
- Clearly define sustainable finance thresholds for clean vehicles and clean energy

Find out more: https://www.itf-oecd.org/cleaner-vehicles
ITF-ASEAN collaboration on fuel economy roadmap

- Strengthen alignment on fuel economy measurement
- Ensure availability of testing capacity for fuel economy
- Build data processing and storage capacity for benchmarking, monitoring and decision making
- Adopt and align policy tools to strengthen fuel economy ambition
  - Common label, harmonised economic incentives or penalties, regional fuel economy standard, common fuel taxation
- Include low- and zero-emission vehicles in the ASEAN fuel economy roadmap
- Target all motor vehicles, not just cars

Find out more: https://www.itf-oecd.org/implementing-asean-fuel-economy-roadmap
Policy actions will become increasingly important to foster & manage EV and digital transitions

Three reasons:

○ Significant economic opportunities (cost reductions, increased competitiveness)

○ Importance to the economy of the automotive and energy industries

○ Climate change mitigation (and risks/costs of delaying action)

Three areas that deserve greater consideration:

○ Changes in the demand for new materials and related supply chains

○ Structural changes in government fuel duty revenues, induced by a shift away from consumption of fossil fuels

○ Impacts on jobs and changes in skillsets that will accompany the shift in automotive technologies due to both electrification and digital technologies
Changes in the demand for new materials

- A surge of EVs (and renewable energy) means that the demand for lithium, graphite, nickel, cobalt, rare earth elements (REEs) set to grow
- Assessments suggest that long term shortages are not likely, but the pace of increase can be constrained by the time needed to scale up production
- Production and refining of battery materials and REEs is also currently clustered in a small number of countries: need for diversification
- Options exist both on the material supply and demand side (→ focus on EVs)

**Supply**
- Stockpiling (as IEA/oil), establishing reliable price benchmarks, battery recycling to reduce raw material extraction needs in the long term

**Demand**
- Maximising utilisation of battery capacity and materials needed for infrastructure: battery and vehicle right-sizing, Electric Road Systems (smaller batteries)
Structural changes in taxation revenue

Percentage change in government revenues per passenger car by EV sales share, tax ratio and relative energy efficiency

Faster revenue decline with:
- Faster EV adoption
- Lower tax on electricity vs fuel (per unit energy)
- Greater energy efficiency gap

Need for tax reforms to safeguard government revenues

Road user charges offer the potential to make up for lost fuel-duty revenues and adequately price the use of vehicles, switching the tax base from energy used to distance travelled
Impacts on jobs

- Economies with large automotive sectors will see structural changes to their industry and labor sectors as the transition to ZEVs proceeds.
- Similar to other disruptions, the switch away from ICEs transforms the needed labour skillsets and disrupts the structure of supply chains.
- Structural changes in energy demand will also affect energy sector jobs.
- Anticipating the change is important to minimize adverse impacts/maximize opportunities.
- Transition will likely require mechanisms that support workers (protection for job losses, training, re-skilling) and respond to changes in the nature of jobs.
What we recommend

○ Maintain or introduce near- and mid-term policy support for clean vehicles and for the low-carbon energy they need

○ Prioritise a transition to direct electrification and renewable energy

○ Address challenges on material efficiency and sustainable supply chains

○ Prepare for a transition from fuel duties, seizing opportunities from increased connectivity and accelerating enabling regulatory actions

○ Include infrastructures for clean energy transport & distribution

○ Prepare for transitions in jobs and skillsets
Contact

Matteo Craglia
Transport Analyst/Modeller, HDRF group lead

Email: matteo.craglia@itf-oecd.org