Low hanging fruit and best incentive towards transport emissions reduction

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1. Determination towards Electric Vehicles (EVs)

• EVs, including BEVs (daily trips), EREVs and FCVs (long trips):
  – Are the best technologies for cars regarding WtW CO2 emissions and primary energy consumption, urban pollution and noise, and oil dependence.
  – “Biomass → Electricity → EVs” uses less biomass than “Biofuels → ICVs”.

• ICVs only have a limited improvement potential, at a high cost:
  – Mostly through hybridization (→ EVs…)
  – EVs and power plants have a higher improvement potential than ICVs.

• EVs price will drop fast once mass produced:
  Total cost of ownership will become competitive in 10 to 15 years.

Low hanging fruit 1:
Concentrate all efforts in the best technologies: EVs.
Technological neutrality is suicidal…
Mid 80’s mobile phone

- 25 years ago, mobile phones weighted 800 g and cost 4000 $.

- They weight, size and cost plummeted rapidly with mass production of their batteries and electronic components (= 3/4 of EV cost).
- They spread because they brought unique benefits to customers…
2. Inexpensive EV incentives

- EVs bring advantages to society, not yet to their owners
  - No real advantage in owning an EV – and drawbacks: cost and limited range!
  - Public incentives are *initially* needed for EV to spread.

- **Price is not the main issue**
  - Consumers anyway buy cars much more expensive than they *really* need.
  - They will only buy EVs if they get *unique benefits* over ICVs.
  - Financial incentives are expensive and hardly effective.

- **Governments should offer *unique benefits* to EV drivers**
  - The main criterion for choosing a conveyance is saving transport time.
  - EVs are successful in regions where EV drivers can *save time* over ICVs: priority lanes usage, free unlimited parking, EV reserved parking, toll and congestion charge exemption…

*Low hanging fruit 2: Promote EVs with time-saving incentives.*
3. Determination towards light Electric Microcars

- **Light Electric Microcars are best for cities and commuters**
  - 80% of car mileage: < 60km/day, 1 occupant, mainly in slow traffic
  - Light Electric Microcars are *objectively* ideal for this usage.
  - They are much cleaner and reduce traffic and parking congestion.

- **Current type approval categories exclude safe Microcars**
  - L7e (quadricycles): mass restriction prohibits adding safety equipment, and power restriction makes them too slow for safe use on fast roads.
  - M1 (cars): excessive weight and size to comply with safety regulations designed for fast roads; approval procedures too expensive for SMEs.

**Low hanging fruit 3:**
*Create a new type approval category, in-between L7e and M1, for light Electric Microcars.*
4. Inexpensive EV charging

• **No-one will buy an EV if he cannot charge it**
  Over 50% of EU families don’t have a garage…

• **Driving to a fast charging station is not convenient**
  – About 30 minutes per 100 km charge, plus driving time…
  – Inspired by the petrol car model: drive to a filling station…

• **Low-power charging at or near home is convenient and inexpensive**
  – Inspired by the mobile phone model: charge while sleeping…
  – 100 kerbside low-power charging poles (with cut-off during peak electricity) cost no more than 1 fast charging station and charge far more EVs.
  – Night charging uses off-peak electricity → good for the grid.

_Low hanging fruit 4:_

*Install inexpensive low-power charging poles on the kerbside in residential districts.*
Thank you very much!

More info at www.going-electric.org