



EPoSS
European Technology Platform
on Smart Systems Integration



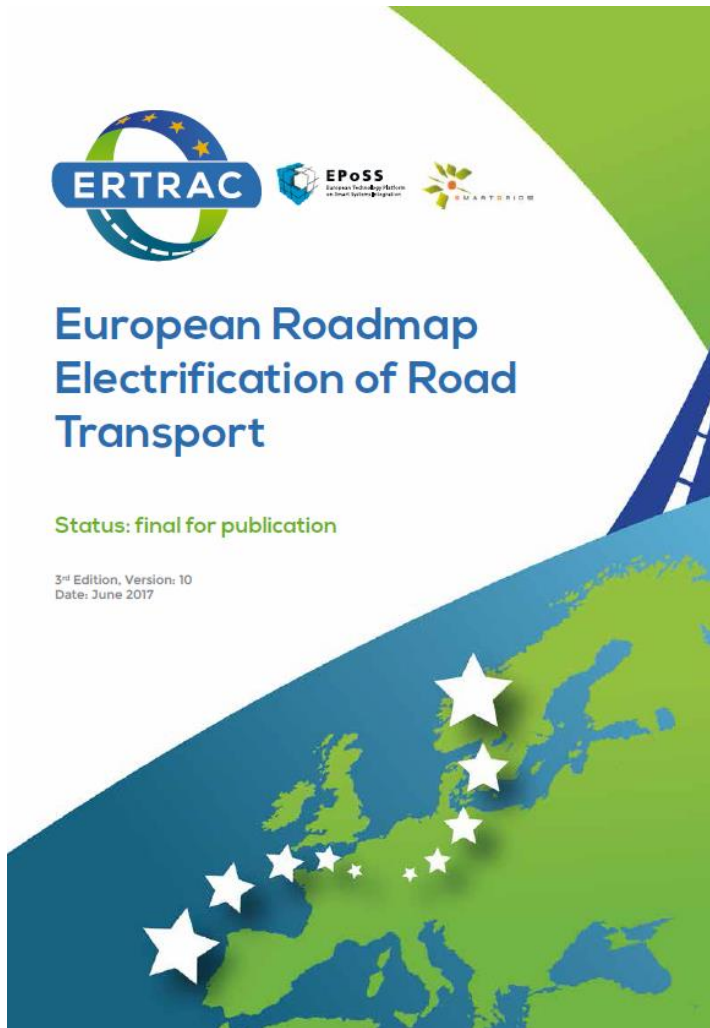
ETIP SNET
EUROPEAN TECHNOLOGY AND INNOVATION PLATFORM
SMART NETWORKS FOR ENERGY TRANSITION

VDI|VDE|IT

User-Centered Update on European Roadmaps Electrification of Road Transport

26 September 2017

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Berlin, Germany



3rd edition

- Joint effort of **ERTRAC, EPOSS and ETIP SNET**
- Commitment and shared vision of the industries involved in the **European Green Cars / Vehicles Initiative PPPs**
- Base document for **call recommendations** on electric mobility since **2009**
- **Topics covered in projects**
- Input to **ECSEL MASRIA**

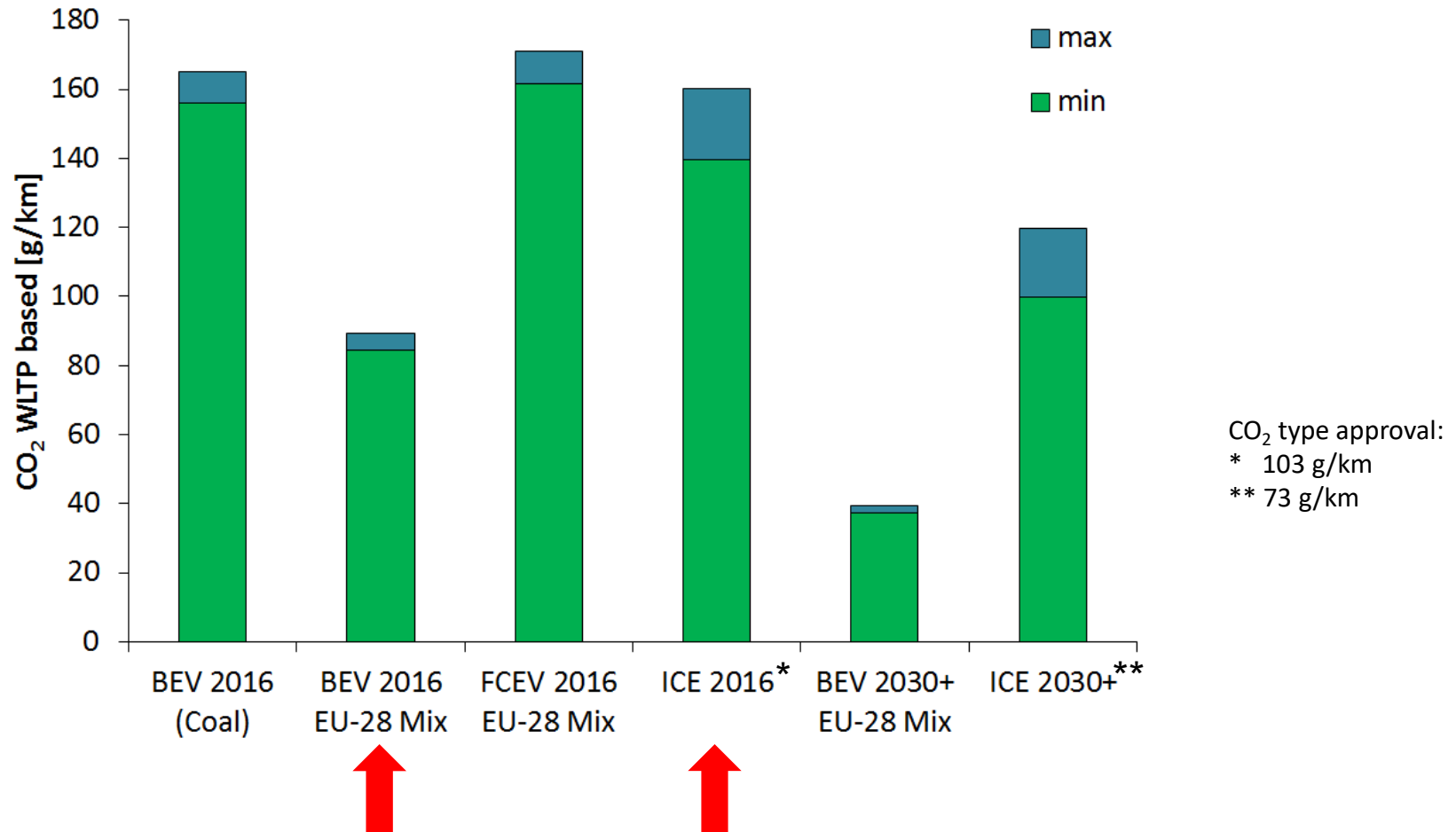
What do users expect?

- prices as low as today's ICE driven vehicles or at least vehicles with **costs competitive** to those of today
- **range, reliability, durability** and re-sale **value** of electrified vehicles similar to conventional vehicles
- range adapted to **use cases**
- usage **comfort** as good as the state of the art ICE-powered vehicles

End of “one vehicle fits all” mentality:

- EV will **not easily fully replace ICE** with same performance
- EVs will be **designed for specific purposes and needs**
- **benefits**, e.g. in terms of access, or synergies with automation and connectivity can compensate

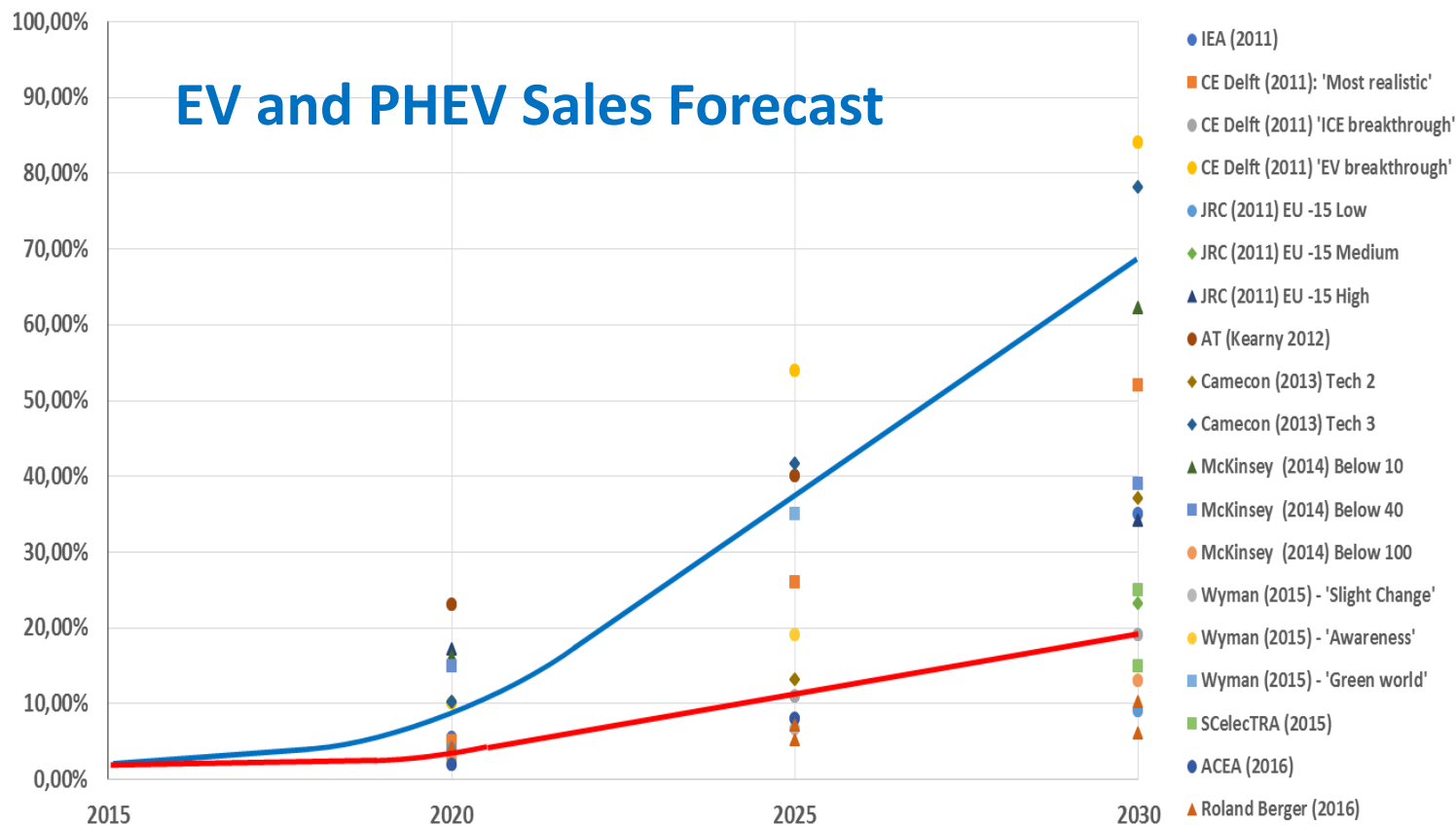
Emissions and Energy Efficiency



CO₂ reduction potential of EVs depends on **WTW energy efficiency** and emissions of the **primary energy source**

When do we get Electric Mobility?

- Approx. **500,000 EVs** on EU roads / **2 Mio EVs** world wide
- Massive **investments** will make electric cars an industrially viable and cost competitive product.



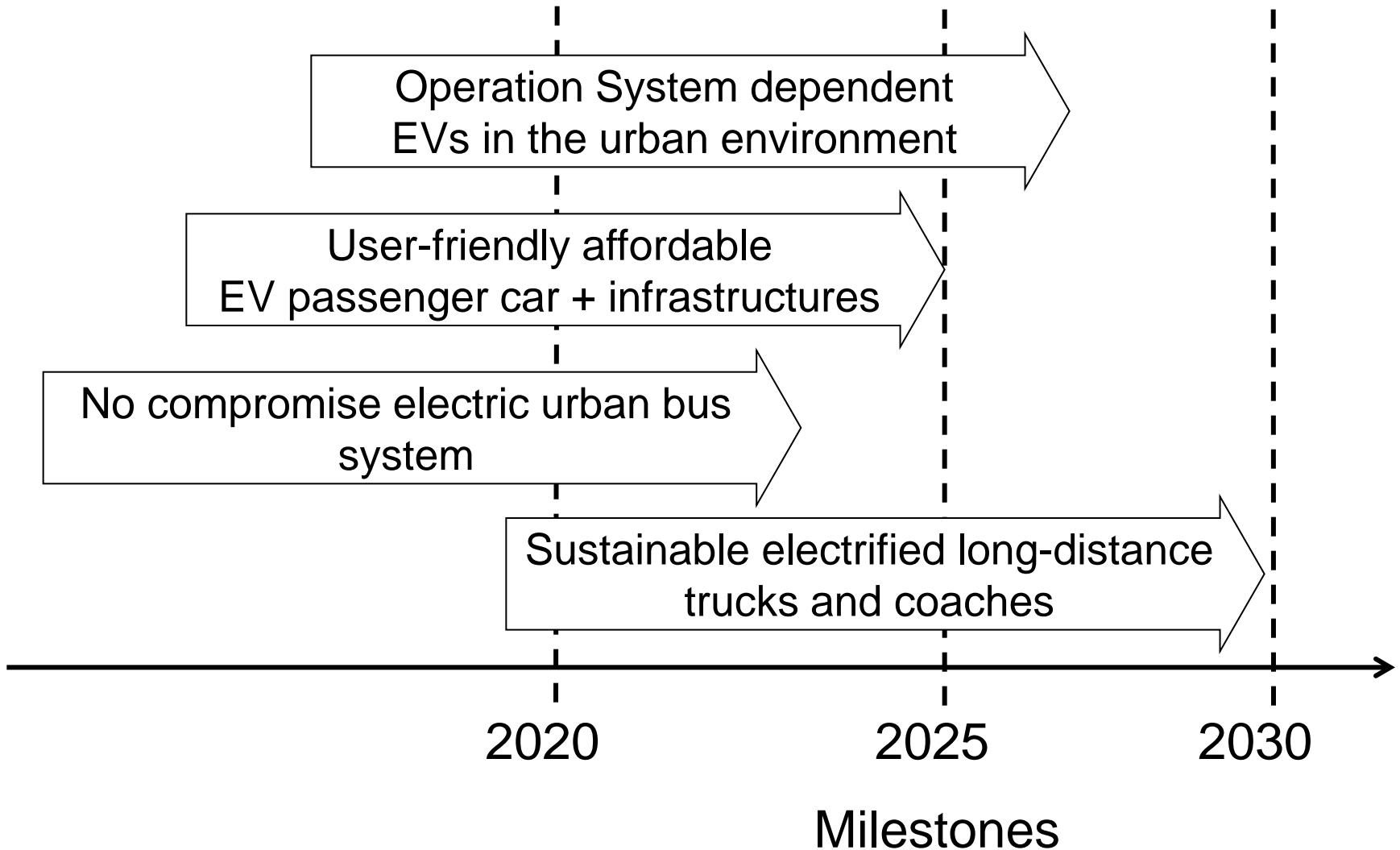
red: evolution blue: major breakthroughs + full policy support

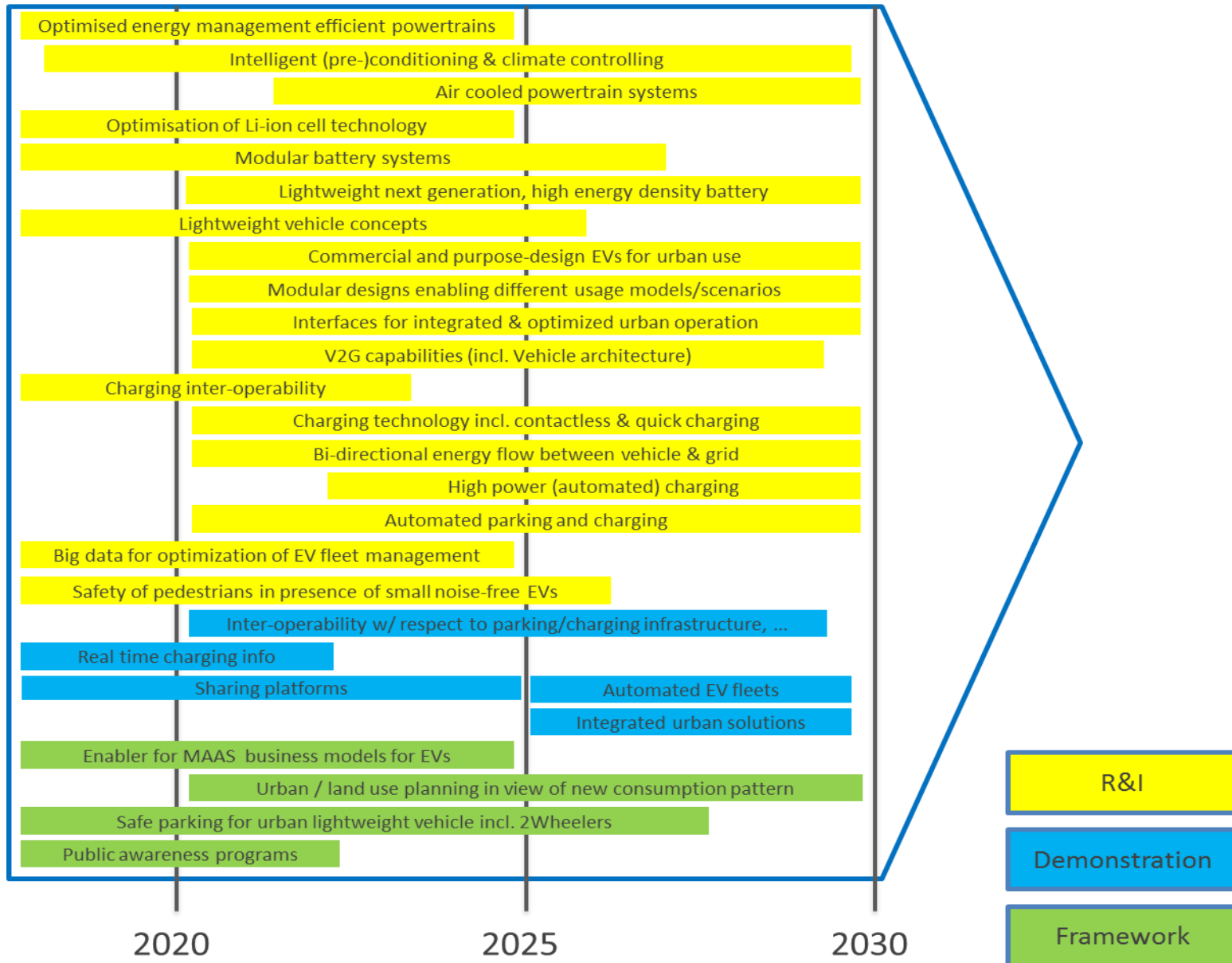
- Technical shortcomings and cost issues will remain and require **more research, development and innovation** activities.



- **2020:** Mass production of passenger cars and scaling-up of heavy duty vehicle electrification
- **2025:** Fully revised electric vehicle concept
- **2030:** Redesigned electrified road transport meeting the requirements of the future connected society

Four Big Initiatives





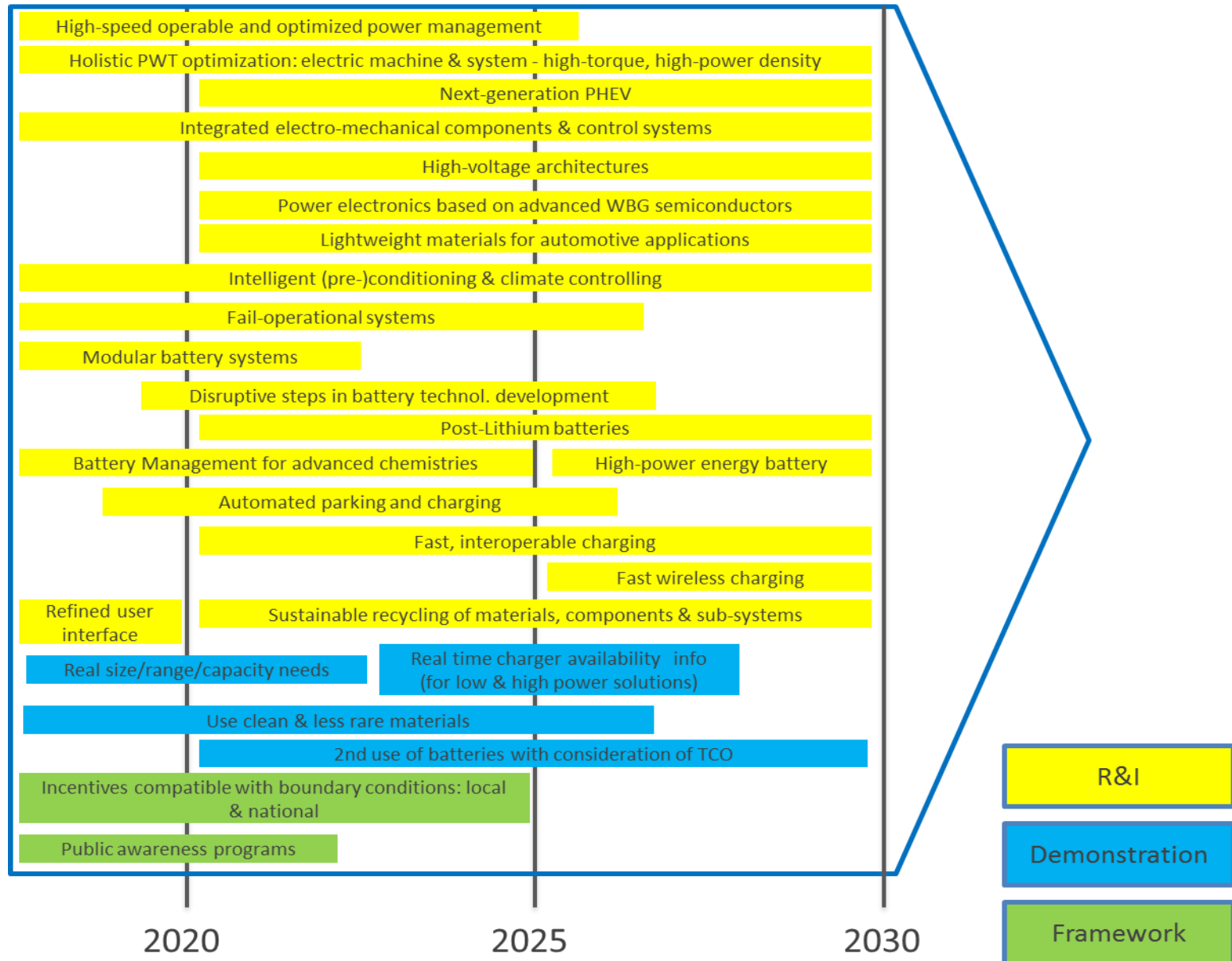
The document is now publically **available** on the EPoSS website:

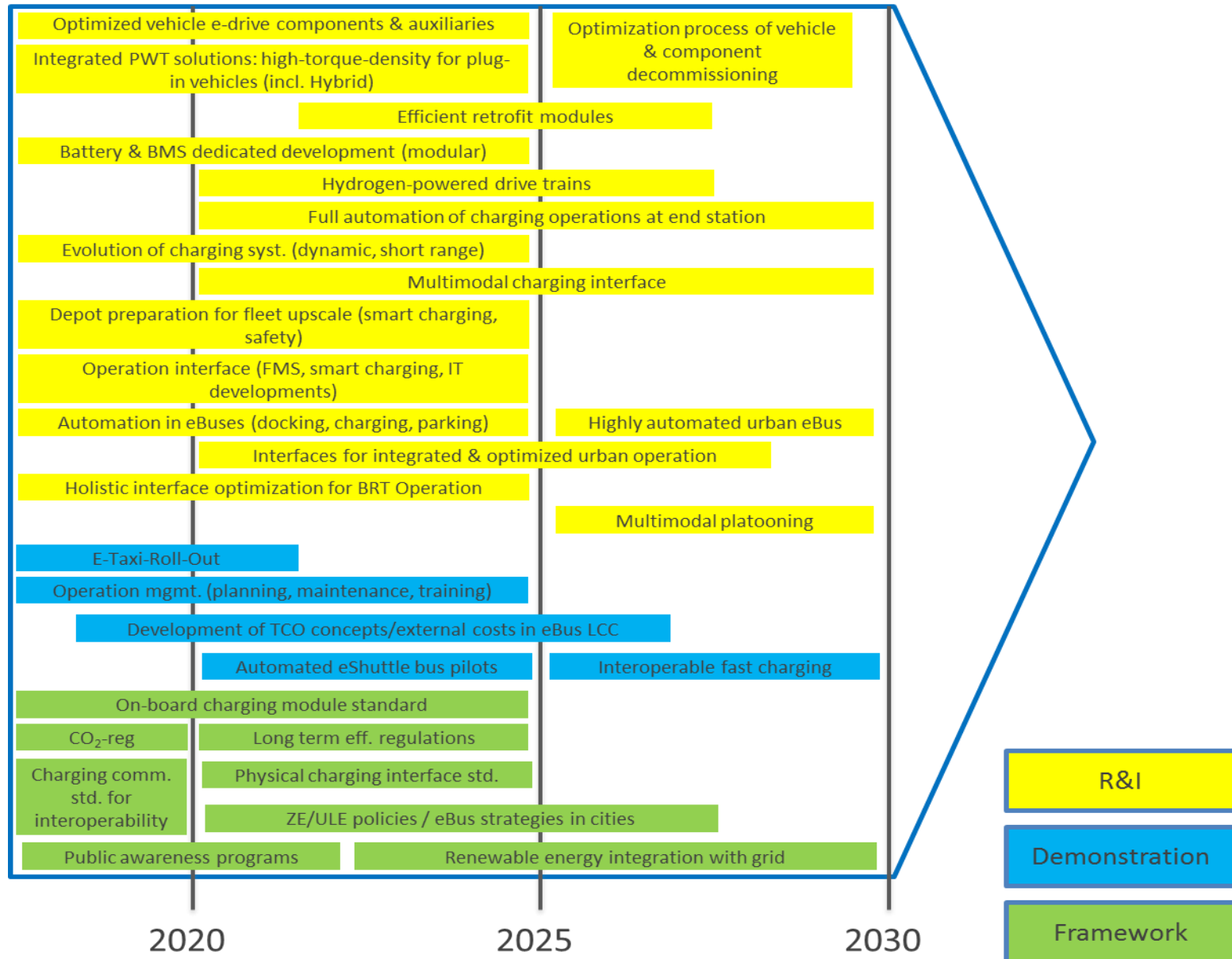
<https://www.smart-systems-integration.org/public/documents/publications>

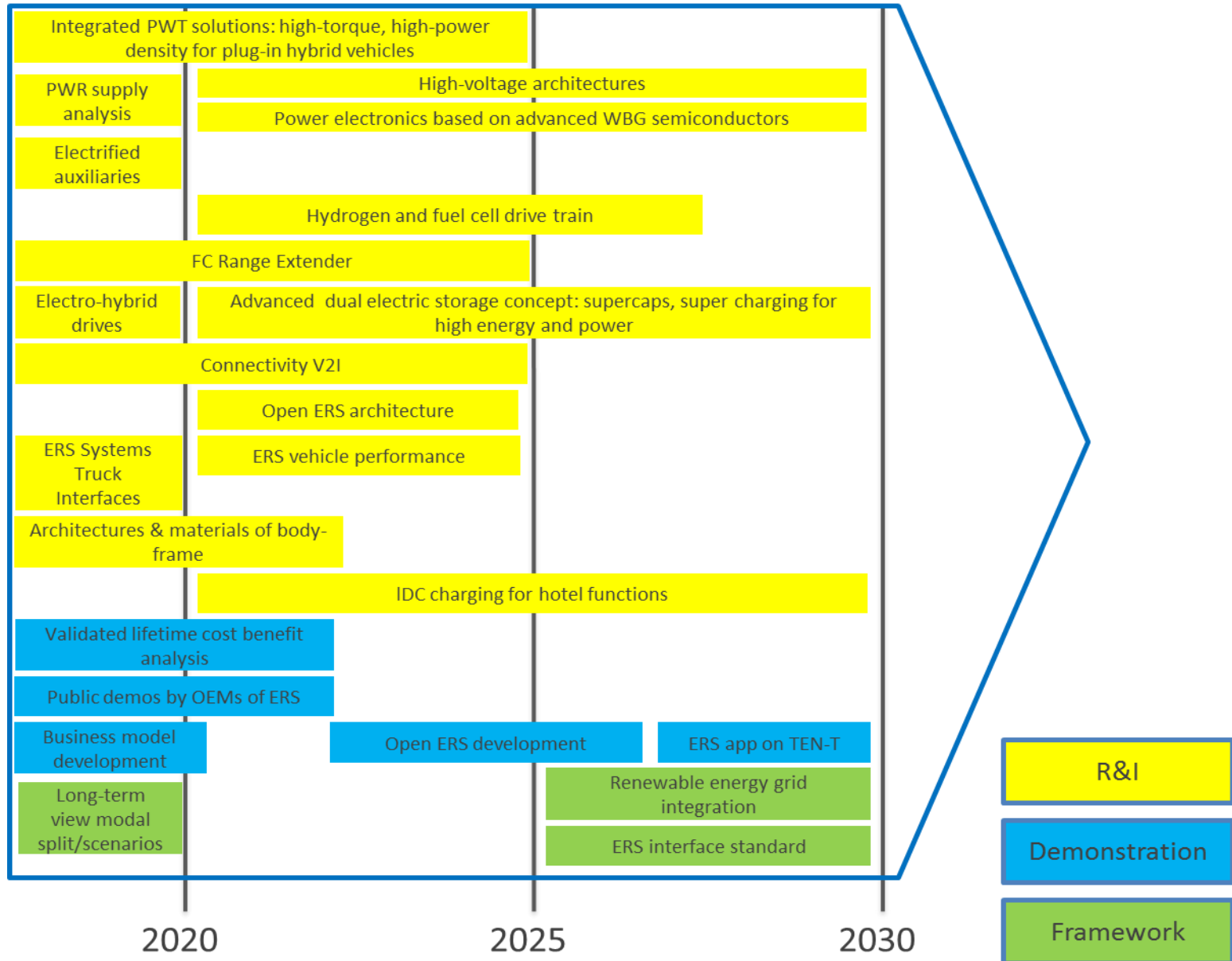


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Strategic Transport Research and Innovation Agenda

	Deployment	Product Development and Operating Models	RESEARCH AND INNOVATION
Enable & Deliver 2020	Increase market share for electric passenger cars, even higher in the urban environment (bikes, buses, vans)	As far as general purpose vehicles are concerned, cost reductions will enlarge the customer base. At the same time, new vehicles will cater for emerging business models based on total-cost-of-ownership considerations, e.g. fleet applications, car sharing, delivery vans	<i>Initiatives listed in the roadmap of ERTRAC / EPoSS / Smart Grids</i>
Action 1	Promote a 400km+ range electric passenger car that meets customer expectations		
Action 2	Progress and demonstration in urban bus electrification R&I program on energy storage systems, thermal comfort as well as low energy air-conditioning. KPI is a Carry all energy for a one day trip on the bus and still stay within cost targets		
Action 3	Public and commercial procurement of EVs Promote the market and create awareness of electric vehicles' maturity and a second hand market of electric vehicles in line with revision of Directive 2009/33/EC		
Action 4	Certification of electric vehicles performance Better comparability of EV types, also for commercial use		Action 5 Development of small and light smart electric vehicles: Components and concepts enabling radical reduction of energy consumption
Action 6	Support local production of batteries, components and electric vehicles Awareness actions for smart specialization and governance in anticipation of value chain disruptions due to shift from conventional to electrified vehicles		

End of “one vehicle fits all” mentality **VDI|VDE|IT**

- Vehicles designed and built in a more specific way for dedicated usage models
- development of new urban mobility concepts and integrated solutions



When do we get Electric Mobility?

- Approx. **500 thousand EVs** on EU roads / **2 Mio EVs** world wide
- Real **market take-up** is imminent.
- Massive **investments** will make electric cars an industrially viable and cost competitive product.
- Noticeable **change in the automotive portfolio** will occur in the next 5 to 10 years.
- Technical shortcomings and cost issues will remain and require **more research, development and innovation** activities.



What has to be done?

- progress in **performance and energy efficiency**
- improve **energy storage** systems
- supply innovative **vehicle concepts**
- exploit potential of **connectivity and automation**
- establish **battery manufacturing** in EU
- provide **incentives** to support the market take-up
- ensure availability of **charging infrastructure**
- make mobility offers for **leasing or sharing EVs**