



EV's and charging infrastructure in The Netherlands

Presentation

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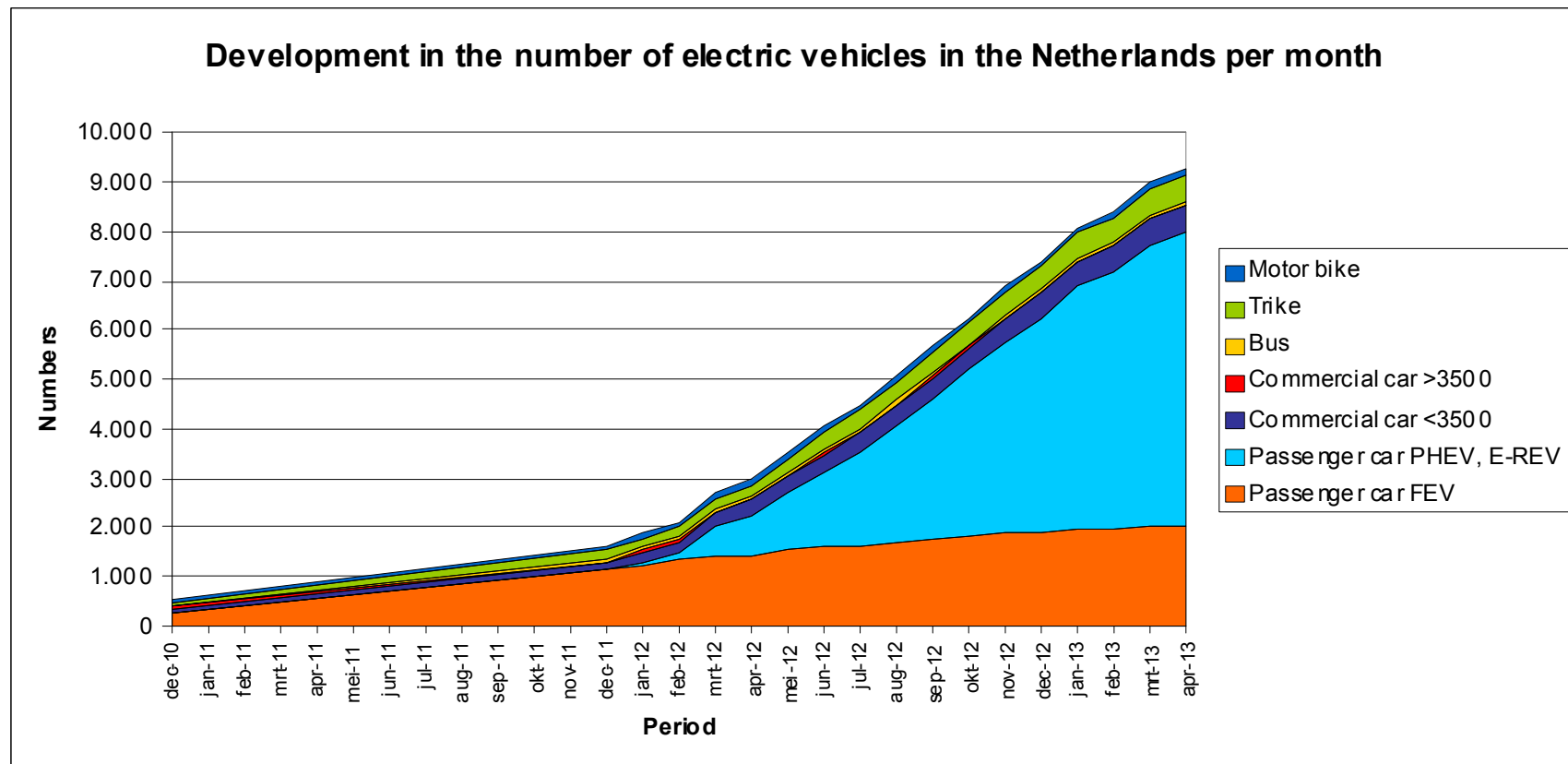


General EV policy in The Netherlands

- EV essential part of sustainable energy system (2050)
 - Coöperation between private and public parties is key
 - Triple focus: vehicles, infrastructure, earning potential
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- This presentation: main focus on infrastructure

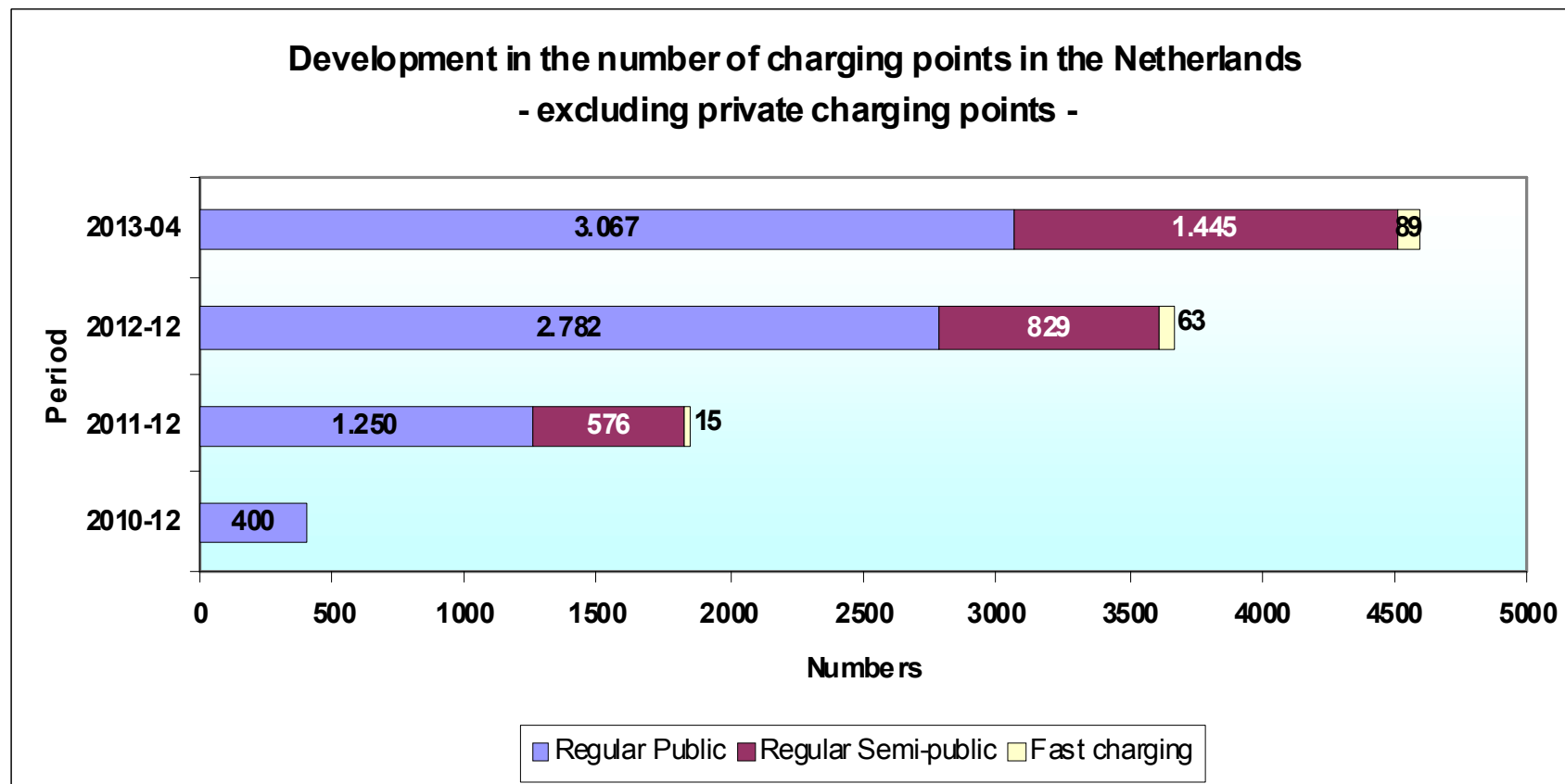


Actual Developments: number of EV's





Actual Developments: number of non-resident charging points





Development in perspective

EV's:

- EV sales 1% of total car sales (2012); strong rise expected in 2013
 - Strong increase in PHEV sales: 8% of world-wide sales (2012, 3rd place in international ranking).
 - Sales of BEV's growing slowly.
- Original target of 15.000-20.000 EV's (BEV + PHEV) in 2015 will probably be realized in 2013.

Charging infrastructure:

- 9000 charging points (resident + non-resident).
- Ratio charging points (resident + non-resident)/EV: 1,4 (2012).
- Demand for public EV-charging points rising by 7.000 - 10.000 in next three years.



Policies to stimulate EV and charging infrastructure

Fiscal incentives EV:

- Investment premium: advantage 11 % of amount of investment
- Exemption of purchase tax on vehicles < 50 gr/km CO2 emission
- Exemption of road tax up to 2016
- Reduction of income tax to be paid on private use of company EV (-14% up till now, -7 % from 2014)

Charging infrastructure:

- Fiscal investment premium on charging infrastructure up to 11 % of investment
- Green Deal public infrastructure



'Green Deal' public charging infrastructure

In general: Green Deal is a public private partnership made to speed up the sustainability of the Dutch economy. Sustainability and economic growth go hand in hand.

Goals green deal public charging infrastructure:

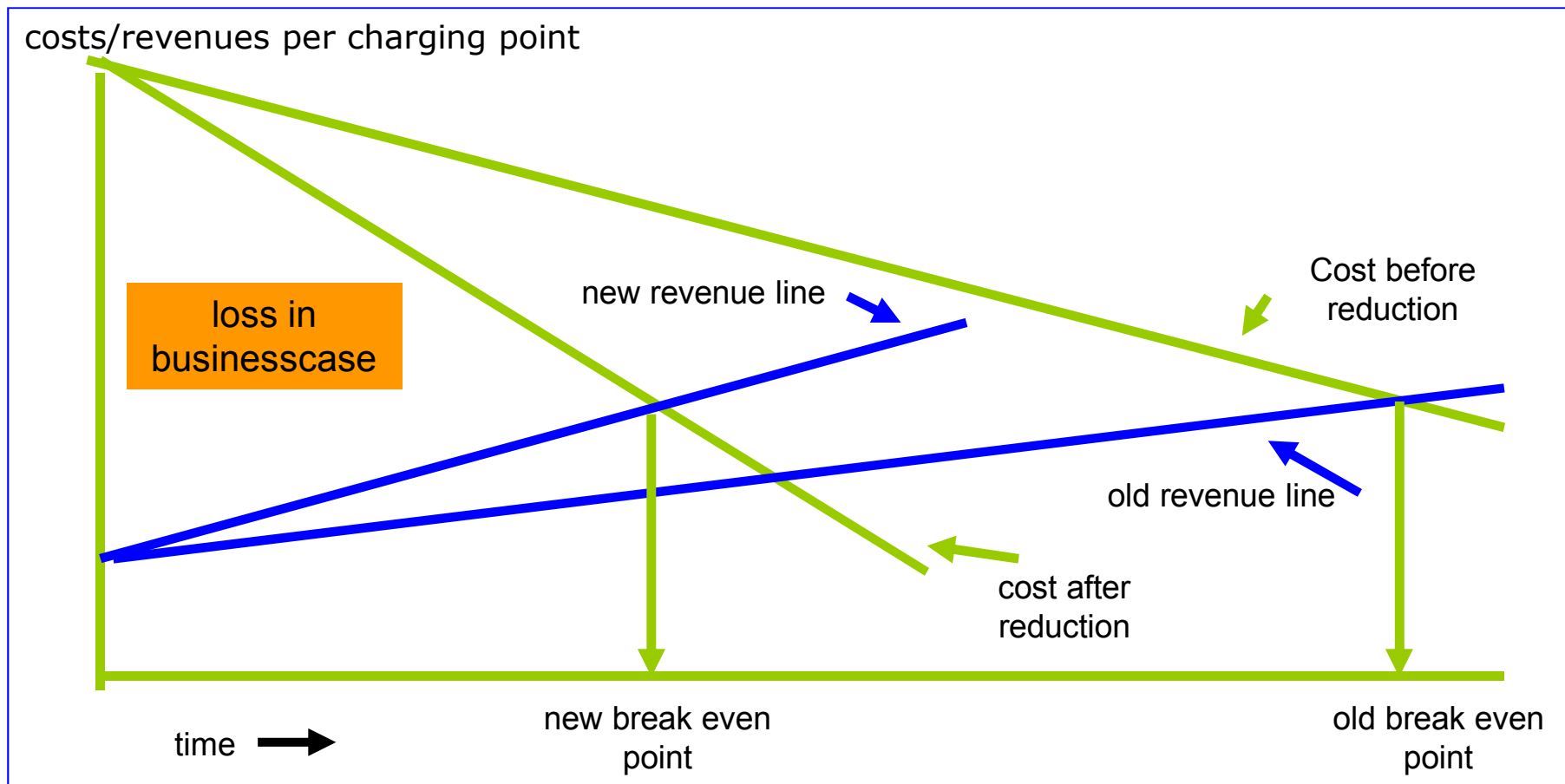
- Profitable business case for public charging infrastructure in 2015/2016
- Finance losses due to unprofitable business case 2013-2016.

Public Private Partnership approach:

- Market parties (operators and builders charging infrastructure)
- Vehicle importers
- Grid operators
- Public authorities (national, regional, local)



Action 1: path to profitable business case





Action 1: Improving business case public charging infrastructure

Improving business case (profitable in 2015/2016) by cost reduction and development of better earning models.

Cost reduction by:

- More cost-efficient metering on charging units
- Reduction of idle capacity of charging points
- More efficient construction and positioning of infrastructure
- More efficient procedures grid operators and local authorities
- Adjustment of regulation to reduce tariffs grid operators for charging infrastructure

Improving earning models by:

- Liberalization charging tariffs
- Optimization location charging points



Action 2: Non-financial measures

- Simplification/harmonization procedures local authorities and grid operators: shorter processes and more transparency for market and user
- Harmonization tendering procedures regional/local authorities
- Harmonization/simplification of functional requirements by regional/local authorities
- More room for innovative solutions and attracting more market parties



Regional tenders of right to operate public infrastructure

Open tenders by clusters of regional authorities (provinces, larger cities). Advantage of clustering:

- Large reduction of tendering costs
- Better negotiation position for regional authorities by larger scale
- Supports harmonization/simplification tendering procedures and functional requirements.
- Open tendering stimulates market development and level playing field
- Financing temporary losses business case by stakeholders



Financing lossmaking business case public charging infrastructure

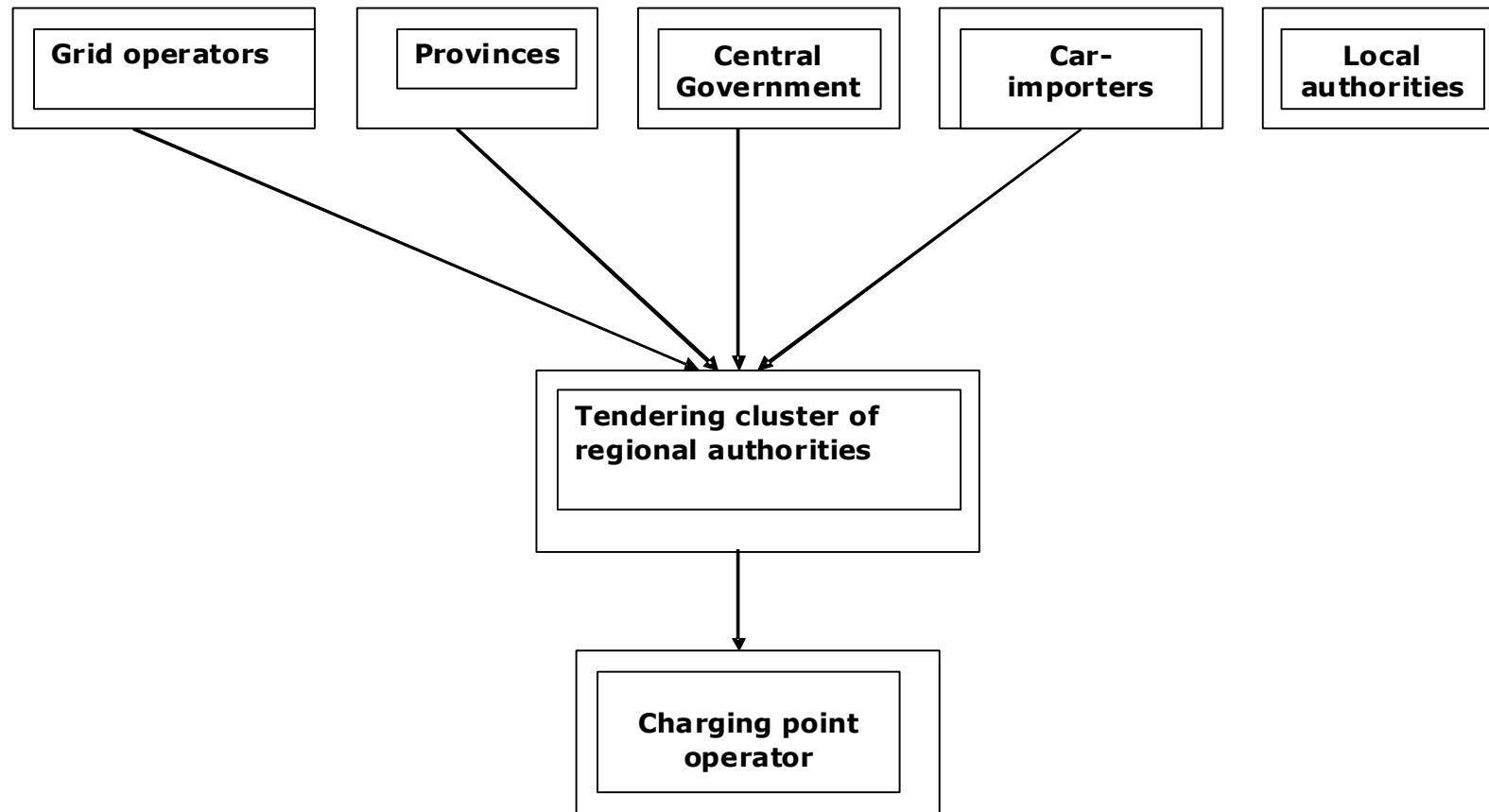
The temporary loss in the business case is financed by:

- Local authorities
- Regional authorities (provinces)
- Grid operators
- Vehicle importers (by issuing a 'charging voucher' which can be used to finance private or public infrastructure)
- Central government finances the remaining part as "capstone" of the Green Deal

- Market parties make sharp bids in tenders and invest in cost reducing innovations.



Schedule: Financing loss in business case public charging infrastructure





Conclusions

- Deployment of EV faster than expected, mainly due to strong growth of PHEV's
- Tax facilities have strong positive effect on sales, especially PHEV's.
- Gradual reduction of tax facilities in coming years must be matched by cost reduction to maintain momentum
- Growth of EV's requires growing investments in public and semi-public charging infrastructure
- Business case public charging infrastructure is still unprofitable because of high cost and low revenues
- Green Deal public charging infrastructure aims at attaining a profitable business case in 3-4 years by public private partnership
- Temporary loss in business case is financed by stakeholders: vehicle importers, grid operators, local, regional and central authorities.