



HDV Land Programme – Future Work

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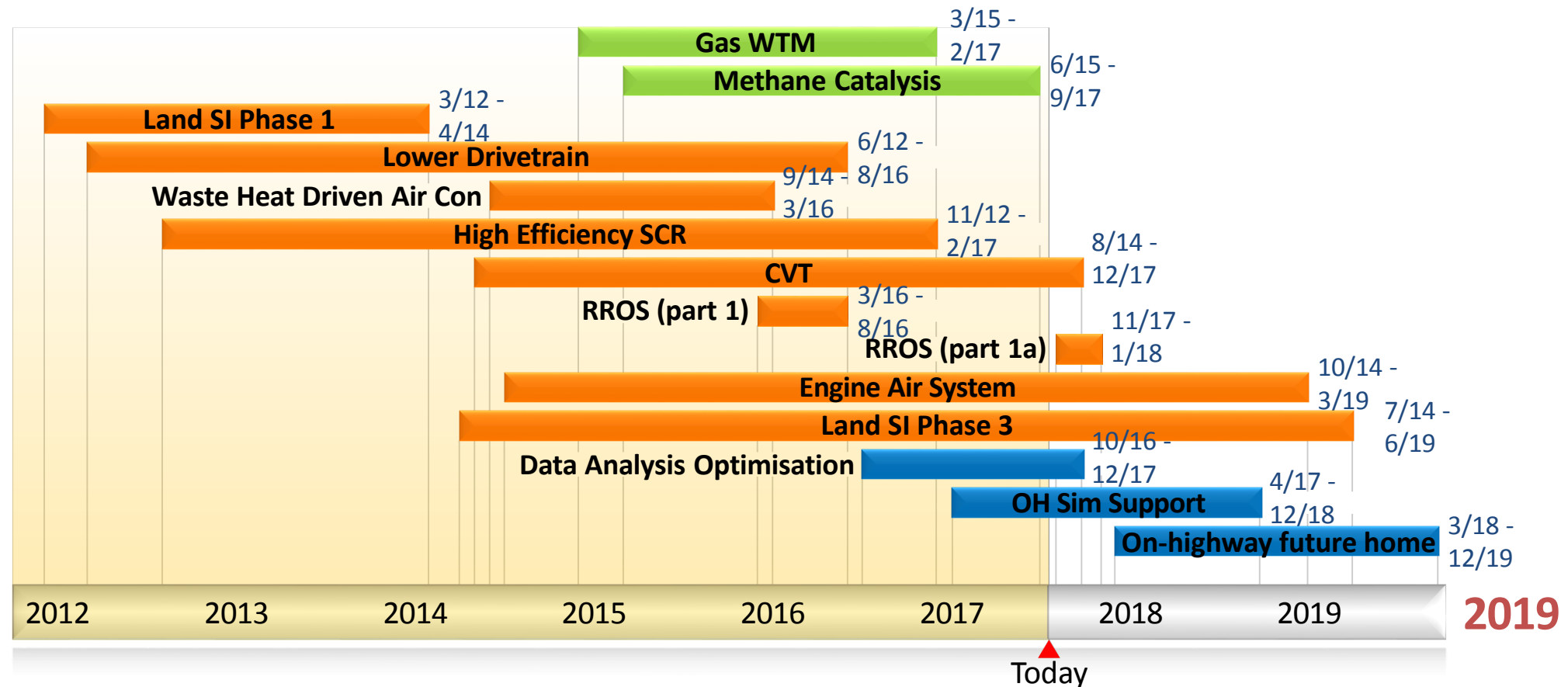
Mission Statement

To bring about a meaningful change to the fuel efficiency and GHG intensity of the UK HDV fleets

- Full scale exploitation strategy that considers all elements of vehicle supply and use:
 - Supply chain
 - Vehicle manufacturers
 - Market based measures
 - Policy
- Strategy leverages the knowledge and insights created from the Programme



HDV Land Programme timeline





Bi-directional approach

Year	2020 – 2030	2030 – 2040	2040 – 2050
Scenario	Be as efficient as possible considering the whole logistics and vehicle system, start the transition to natural gas and gain momentum with fleet turn over.	Looking to create scenarios consistent with our journey from 2020 through to 2050	Degree of GHG reduction dependent on negative emission from Bioenergy and CCS, possible need to switch from carbon based fuel circa 2040. Options are: <ul style="list-style-type: none">• Battery / logistics design breakthrough• Hydrocarbon range extending• Charge on the move• Hydrogen range extending



Deploy outcomes and insights from Efficiency Programme and Natural Gas work.
Challenge market barriers.

Deploy insights from 2050 scenarios and energy system designs

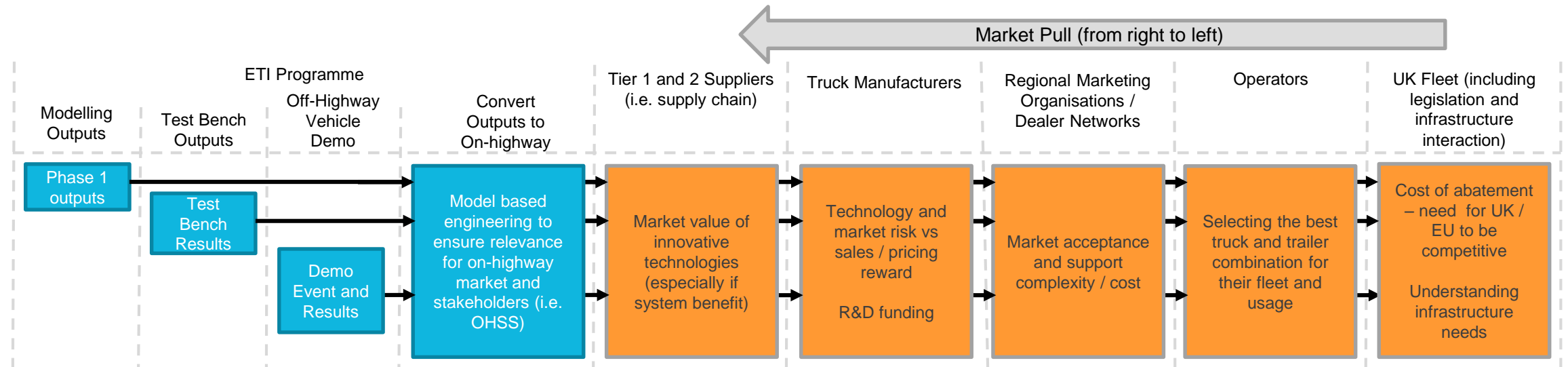


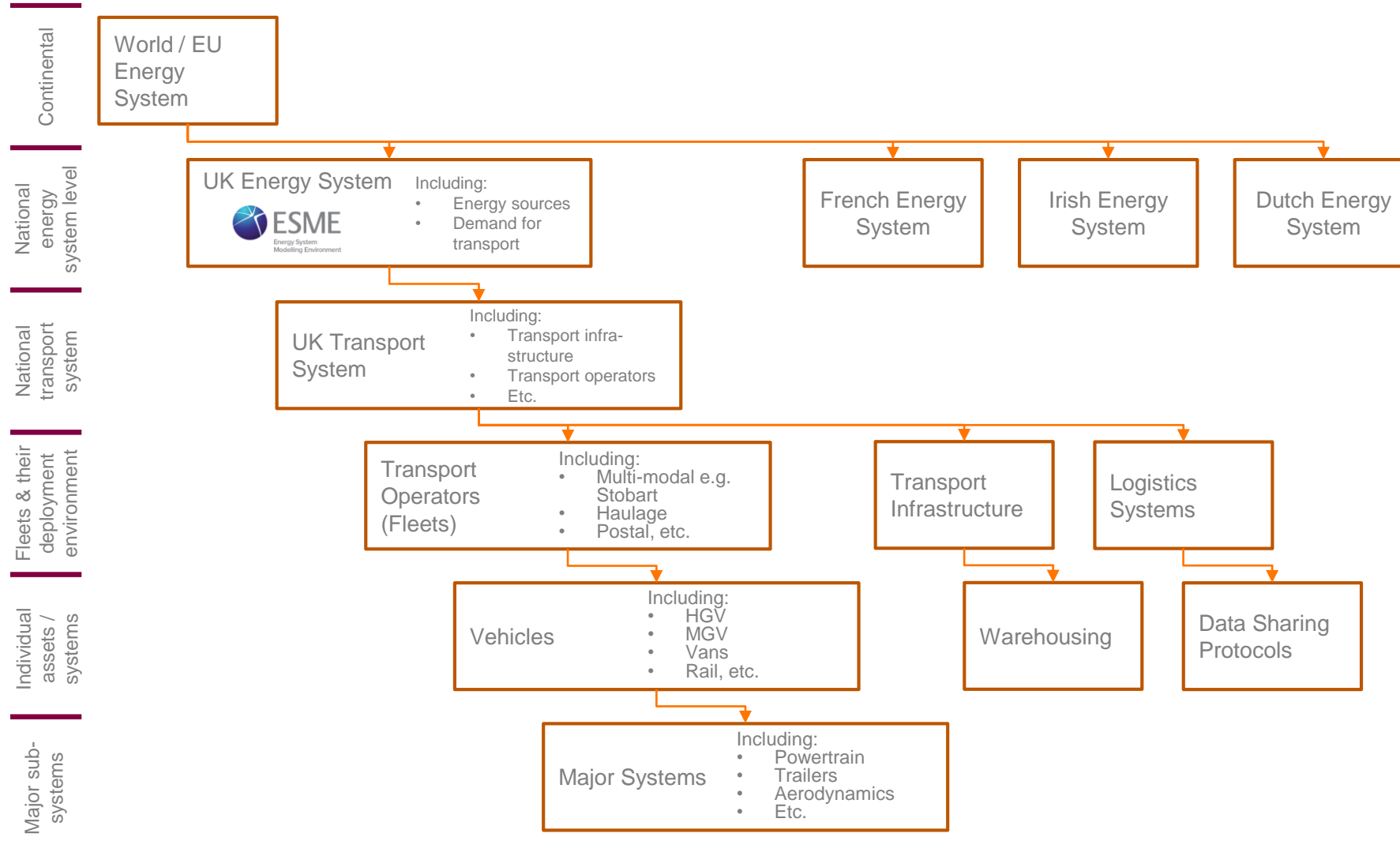


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What we plan to do over the next 2 years...

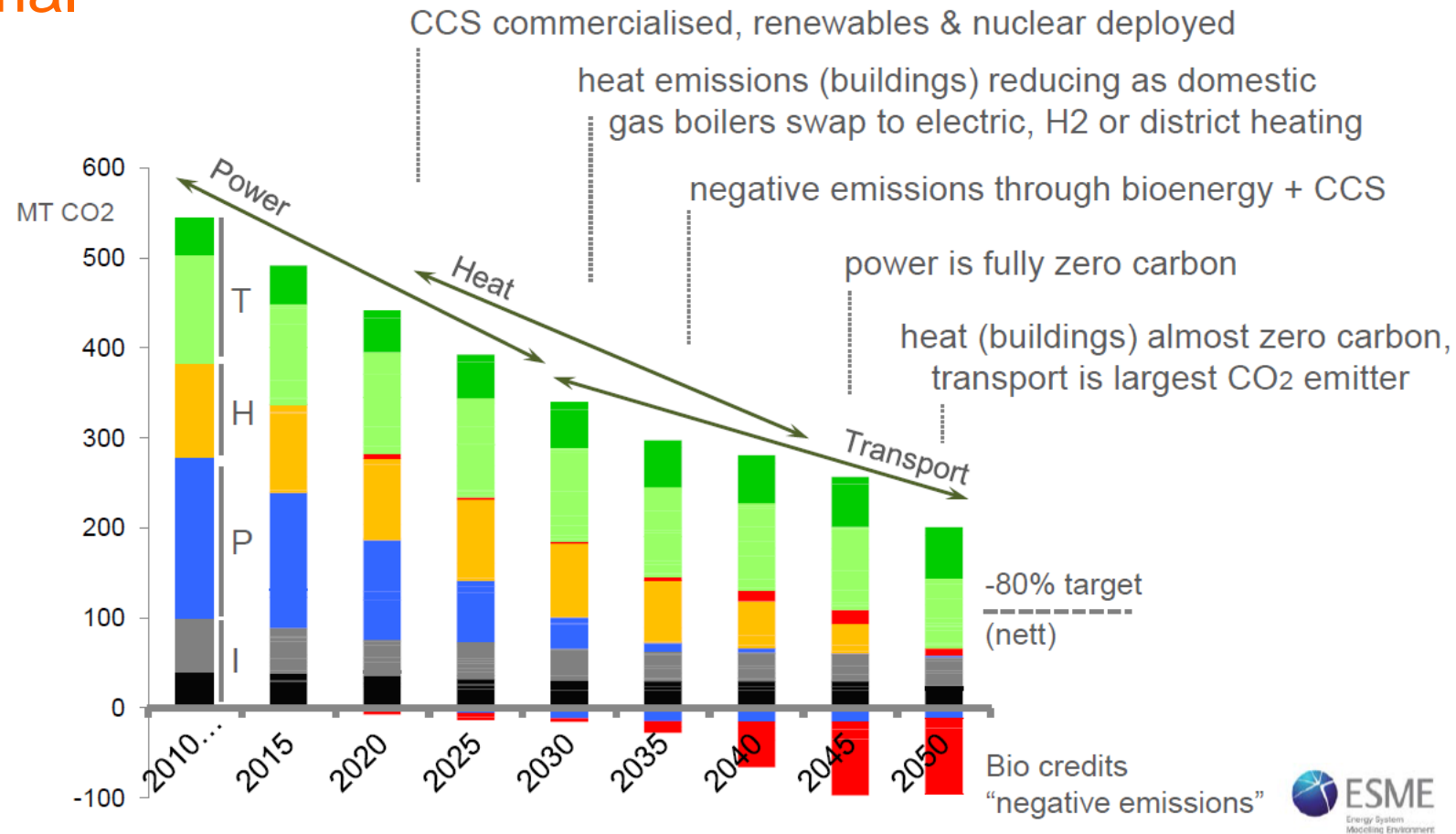
- Convert Caterpillar work to on-highway, verify applicability and exploit with Tier 1s, on-highway OEMs and policy stakeholders
- Complete projects that deal with the information barrier that exists for truck purchasers
- Set-up a legacy vehicle that will:
 - create a system modelling capability from energy system to individual trucks; thus
 - provide direction and insights to the on-highway heavy duty freight sector








ESME System – one route to meeting 80% CO₂ reduction for the UK – cost optimal






What we would like others to do and think about...



Deploy outcomes and insights from Efficiency Programme and Natural Gas work.
Challenge market barriers.

- Caterpillar to exploit the outcomes into the off-highway market
- Our Phase 2 project partners to exploit the outcomes into all relevant markets
- Create policies which reflect the varied use of HDVs, but set GHG targets
- To review our Gas Well to Motion insights report and to implement its recommendations



Deploy insights from 2050 scenarios and energy system designs

- Read our insights reports in this area once released in 2018
- Create and use models and techniques that allow the total freight system to be considered as a system – this becomes more important if HDV energy vectors are to change!



Summary

To bring about a meaningful change to the fuel efficiency and GHG intensity of the UK HDV fleets

- Significant opportunity to influence the off-highway market through Caterpillar
- Still lots of work to do to leverage the programme outputs into the desired outcomes for on-highway
- An on-highway freight future home is an important part of our legacy
- Over the next 2 years we will:
 - Complete the remaining projects
 - Leverage our programme outcomes into the on-highway truck market
 - Support mechanisms that overcome current market barriers
 - Inform the debate on long term HDV GHG reduction opportunities, costs and energy vectors
 - Create mechanisms where this debate can continue and total system implications can be assessed



Thank You

Speak to our specialists in the Heavy Duty
Vehicles exhibition area for more details