Bioenergy Supply Curves

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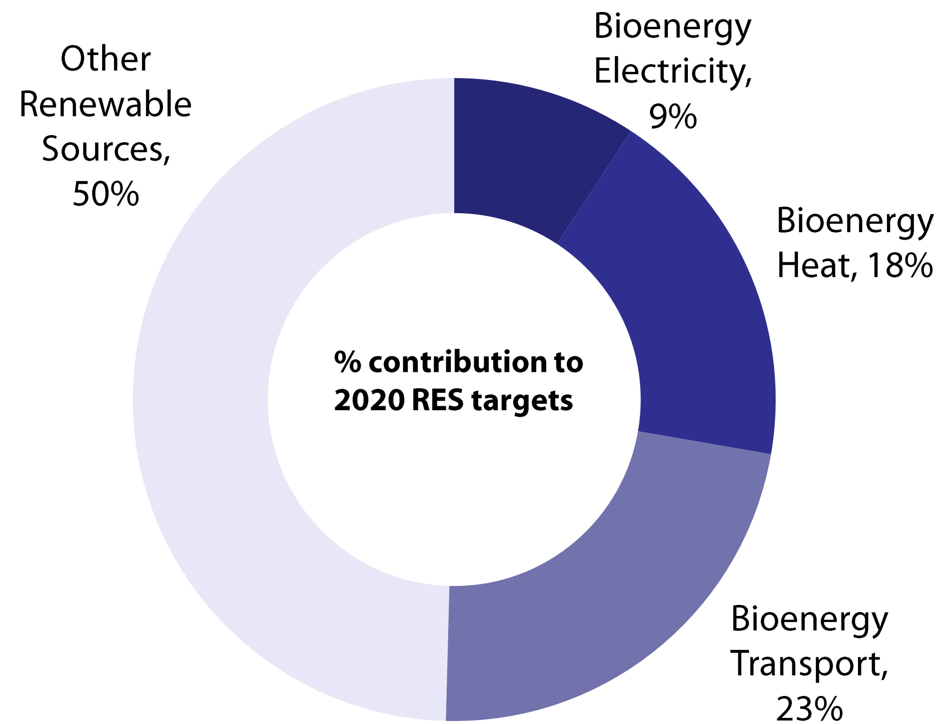
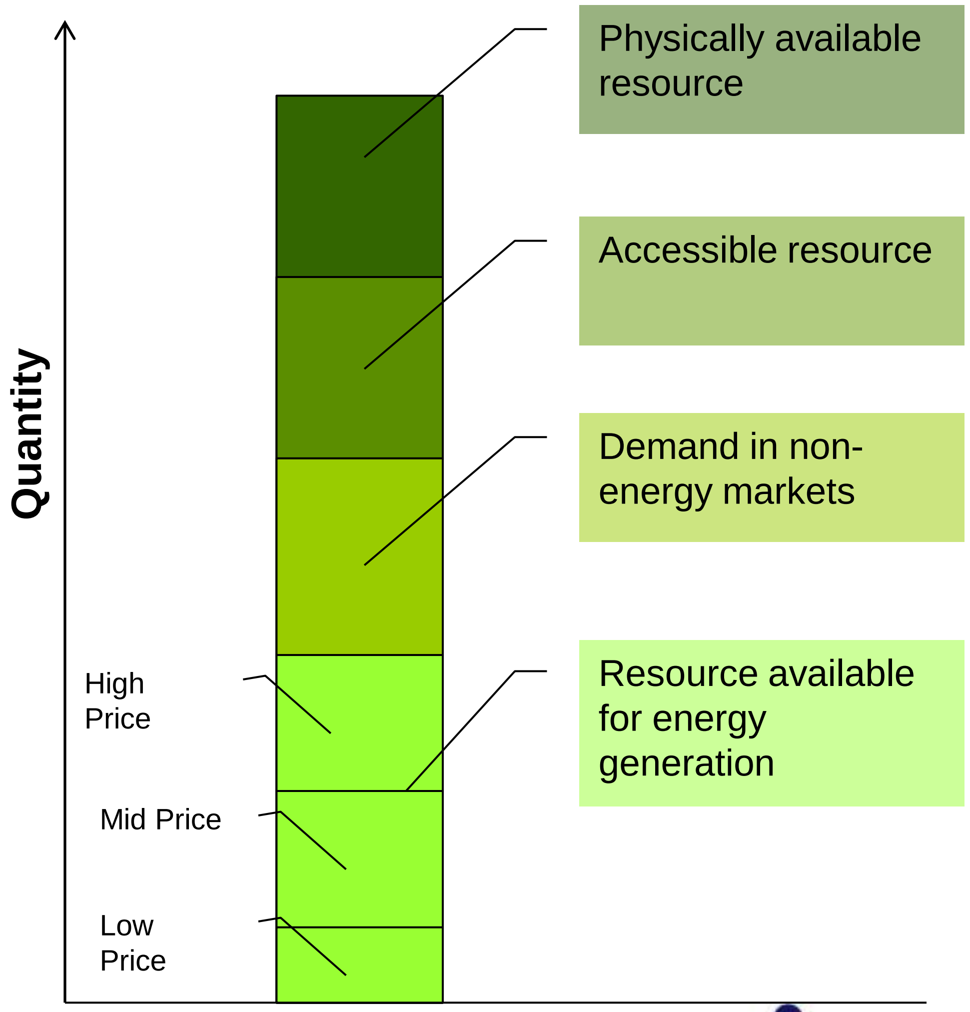
2020 Energy Targets

- ½ of 2020 renewable energy target set to come from bioenergy
- Achieving the target equates to:
  - Over 600 Million litres of Biofuel and
  - An additional 300,000 homes/ 5,000 commercial buildings / 300 industrial sites using renewable energy for heat and
  - Co-Firing, biomass/AD CHP, landfill gas and Waste to Energy capacity of 385 MW by 2020

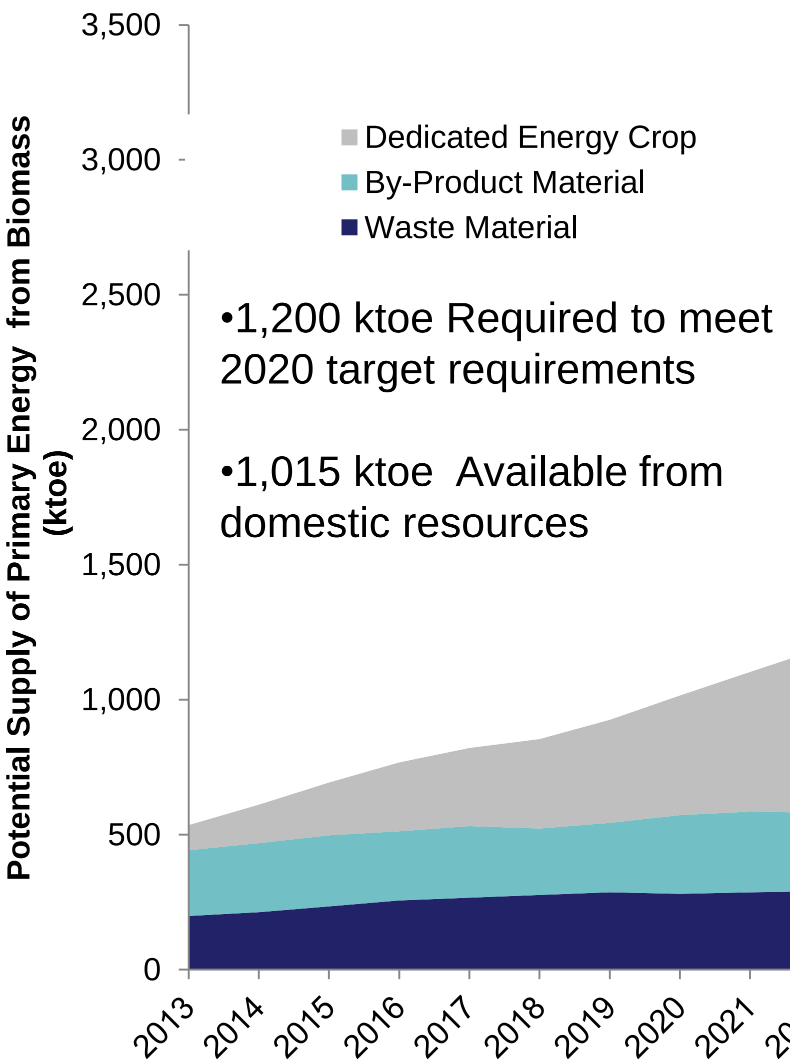


What resources are available for energy market?

- SEAI and AEA looked at 14 biomass resources to 2030
  - Physical constraints
  - Demand for products in non-energy markets
  - Production costs of biomass resources for energy
- What might be produced at various market prices for energy?
- Supply curves for each year to 2030



Potential Resource (Primary Energy)



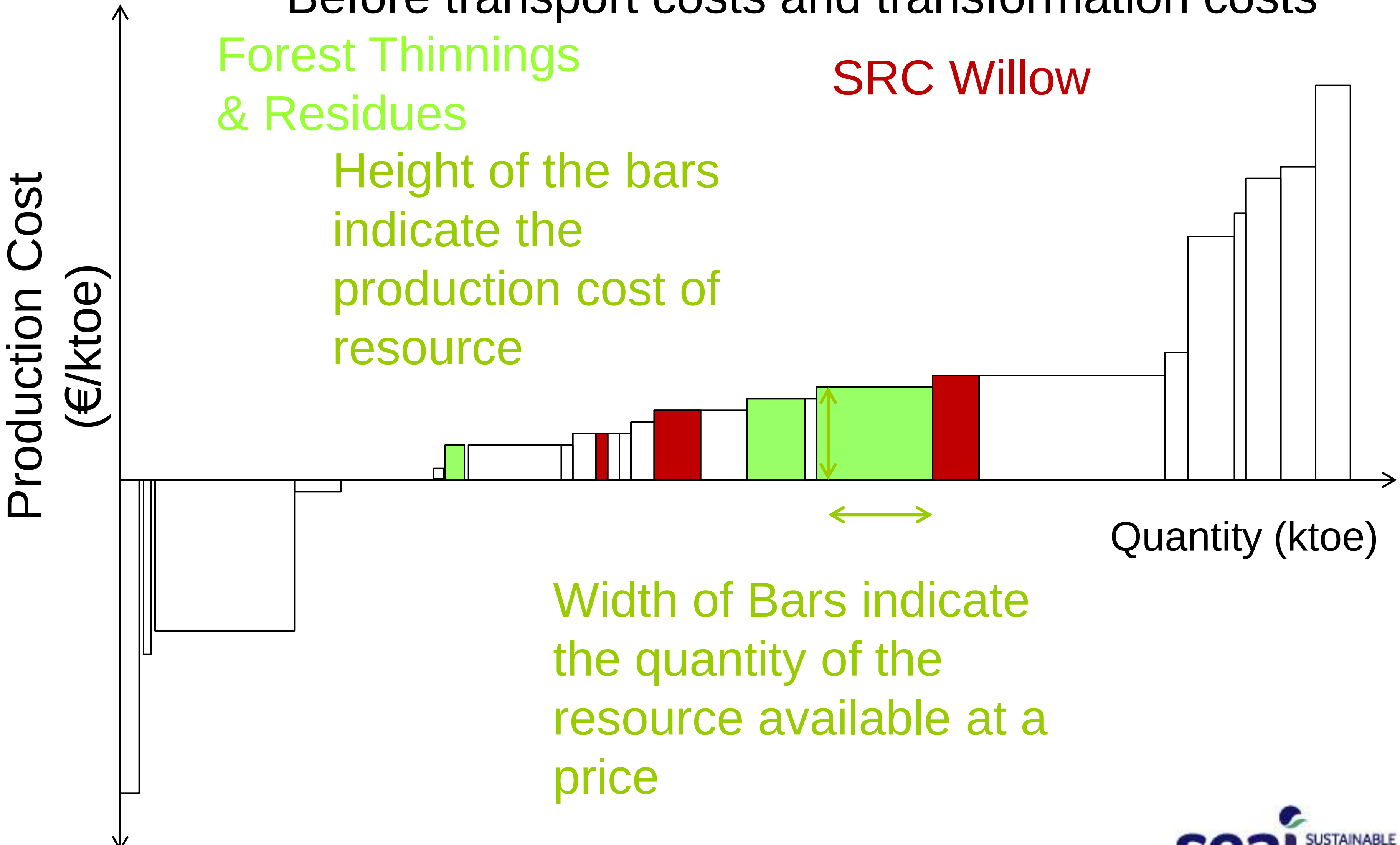
- 1,200 ktoe Required to meet 2020 target requirements
- 1,015 ktoe Available from domestic resources

- 140,000 tonnes of Waste Wood
- 600,000 tonnes of Solid Waste
- 17,000 tonnes of Recycled Vegetable Oil
- 6 million tonnes of Animal Slurry
- 270,000 tonnes Food Waste
- 1,000,000 m³ of forest thinnings
- 112,000 m³ of sawmill residues
- 82,000 tonnes of Tallow
- 90,000 tonnes of Straw
- 161,500 ha of Energy Crops

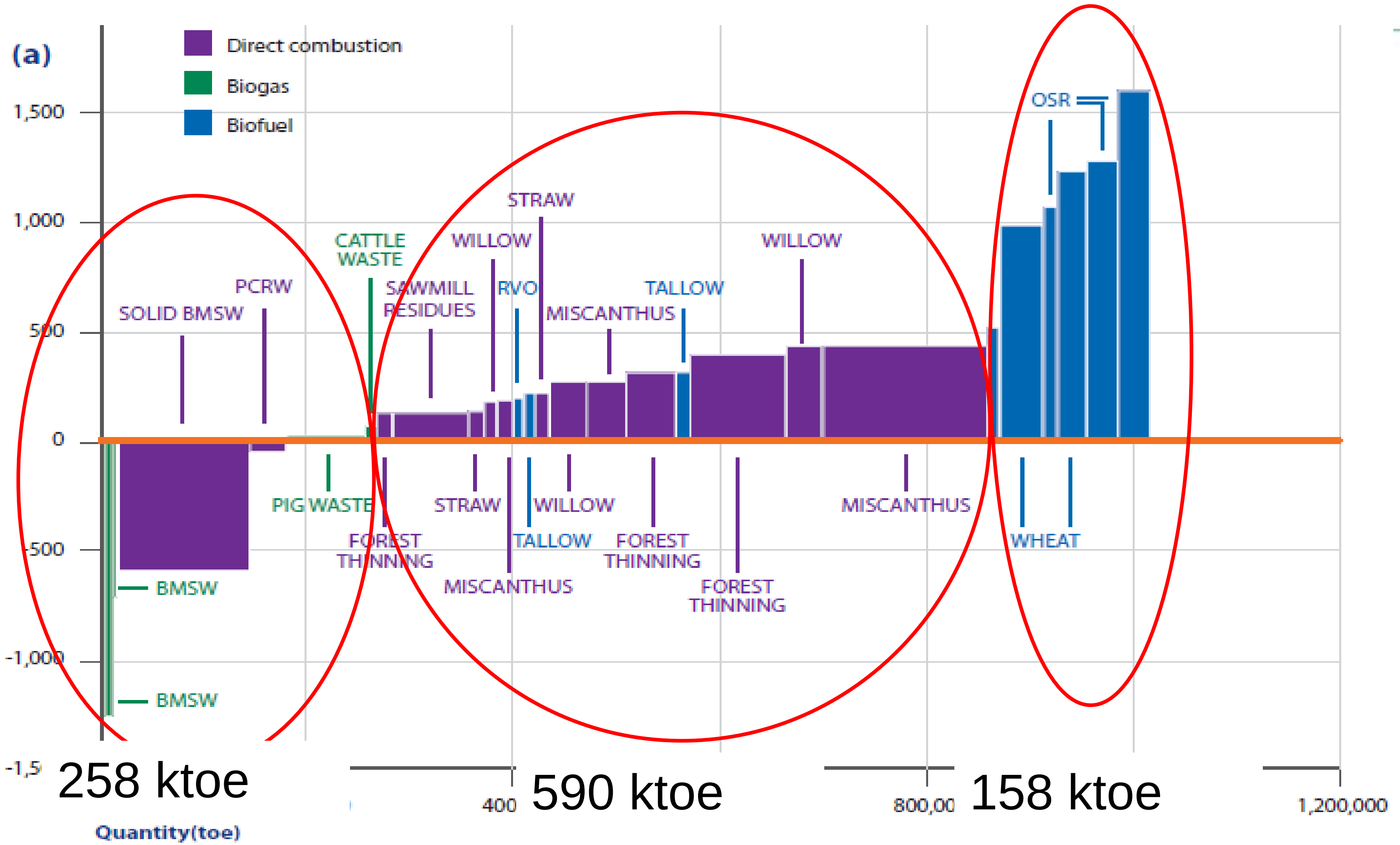
Energy crops largest potential for growth

Supply Curve 2020

Before transport costs and transformation costs



Supply Curve 2020



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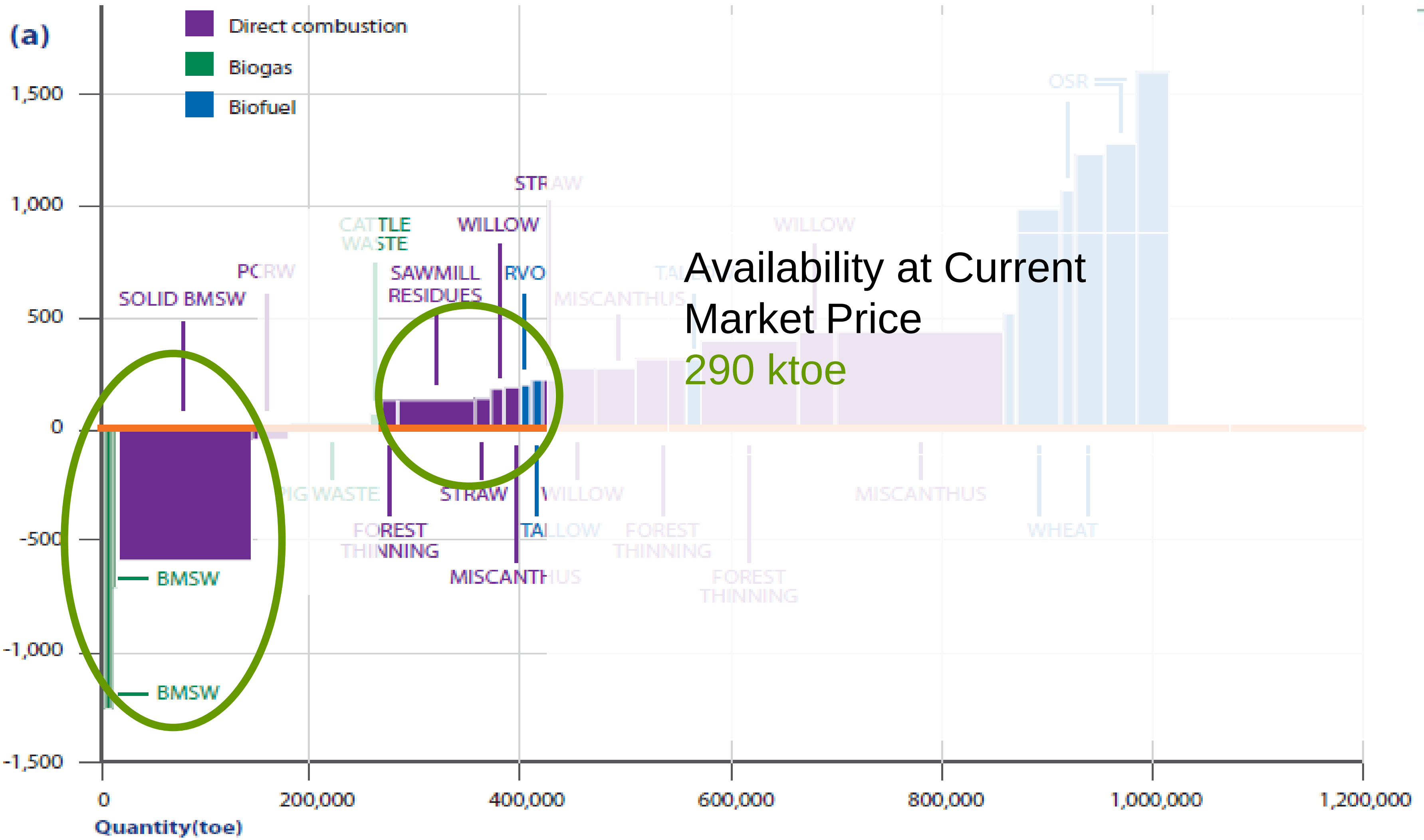
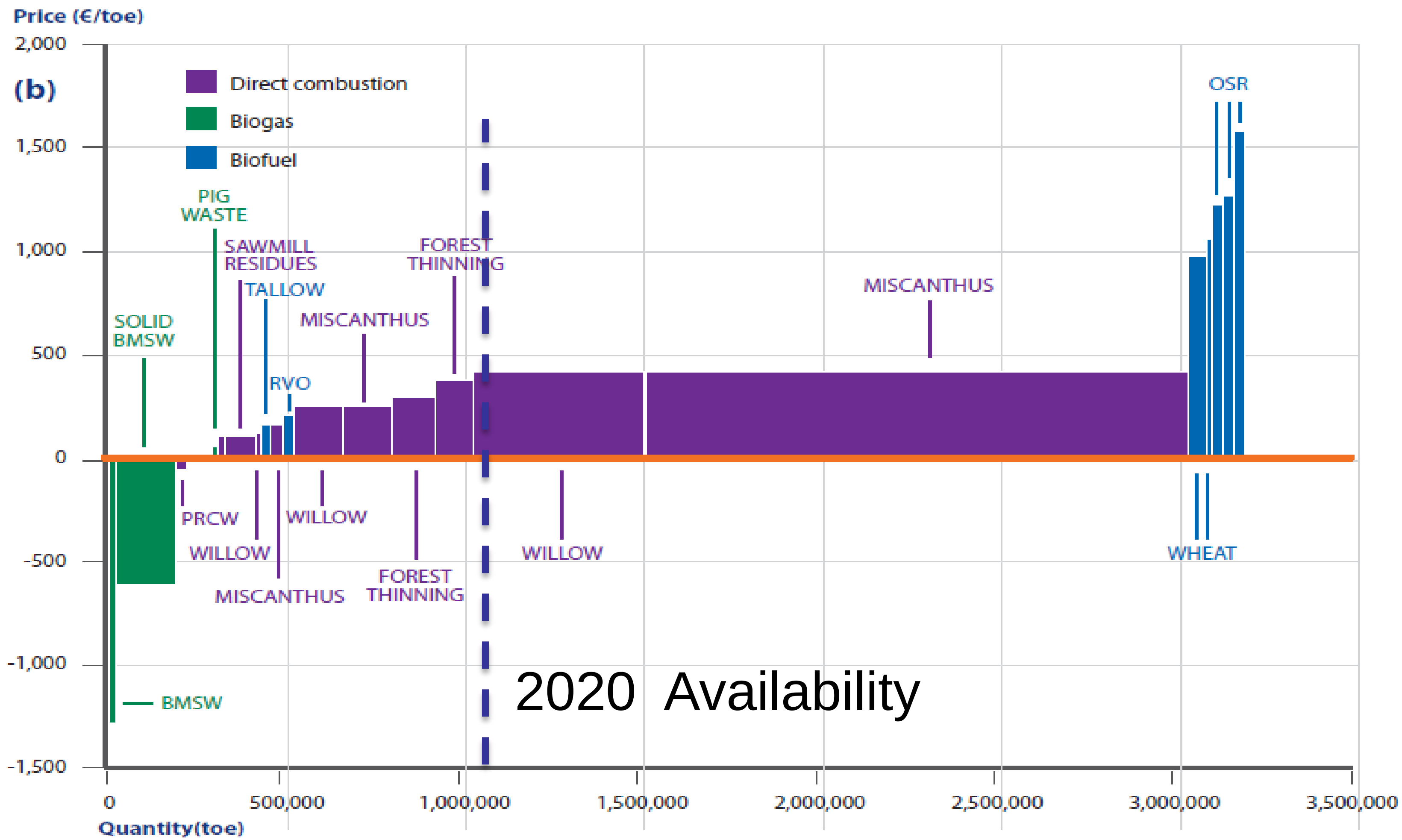
Supply Curve 2020



Availability at Current Market Price
290 ktoe

Supply Curve 2030



Insights from Supply Curve Analysis

- Reliant on imports to achieve transport targets
  - availability of sustainable biodiesel for import

- Energy Market prices from other energy sources below production cost of most biomass resources.

- Import prices likely to be competitive with most domestic sources

- Potential to increase supply of domestically sourced biomass

SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Implications for policy

- SEAI modelling of interactions impacting on bioenergy use heat, electricity and transport
- Demand side intervention in the heat sector
  - Close price gap between renewable energy and fossil fuel
  - Increase long term demand
- Enabling supply side actions
  - Tackle market barriers
  - Increase the quantity of resource available at low price
  - Compete with international biomass prices
  - Sustainability criteria

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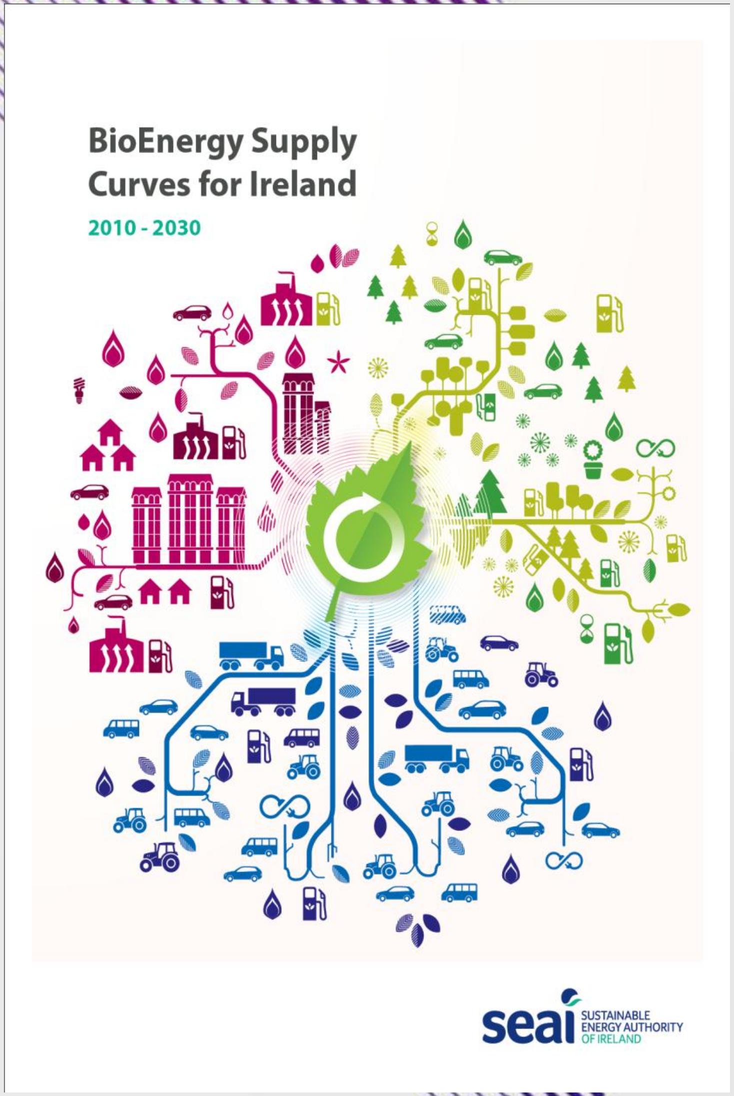
http://www.seai.ie/Publications/Energy_Modelling_Group_/Energy_Modelling_Group_Publications/BioEnergy_Supply_Curves_for_Ireland_2010_-_2030.pdf



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