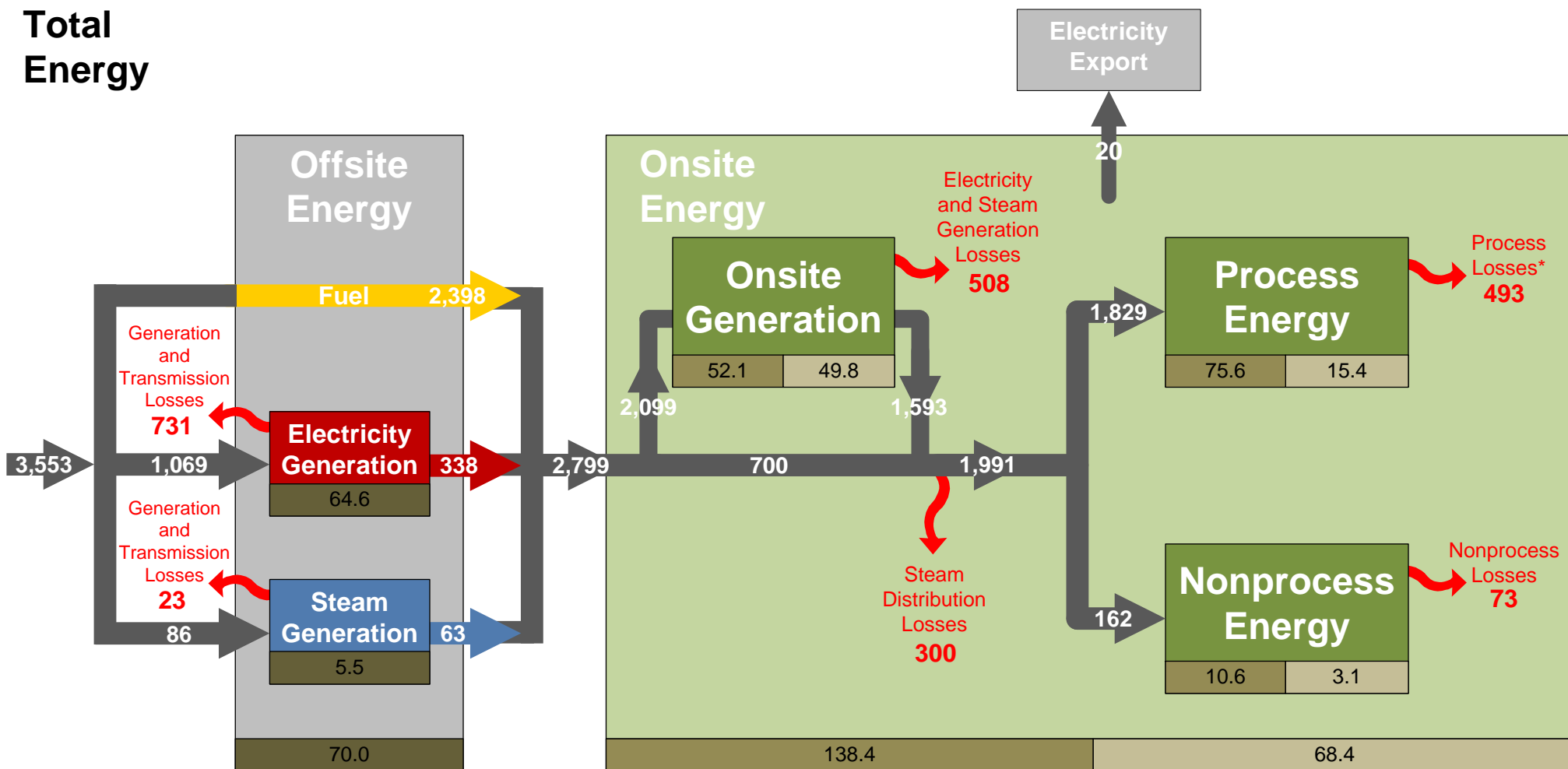


Manufacturing Energy and Carbon Footprint

Sector: Forest Products (NAICS 321, 322)

Total Primary Energy Use: 3,553 TBtu
Total Combustion Emissions: 138 MMT CO₂e

Total Energy



Energy Use (TBtu)	All Energy
	Fuel
	Electricity
	Steam
	Losses
Combustion Emissions (MMT CO ₂ e)	Offsite
	Onsite
	Total
Total = Onsite + Offsite	

* Exhaust losses from process heating are not estimated

Data source: 2006 MECS

Published: August 2010, revised December 2010

Units: TBtu = Trillion British Thermal Units

MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent

Notes: Feedstock energy not included

Energy values <0.5 TBtu shown as 0

Manufacturing Energy and Carbon Footprint

Sector: Forest Products (NAICS 321, 322)

Onsite Energy Use: 2,799 TBtu
Onsite Combustion Emissions: 68 MMT CO₂e

Onsite Energy

Onsite Generation

Conventional Boilers

13.0 10.7

CHP/ Cogeneration

39.0 39.0

Other Electricity Generation**

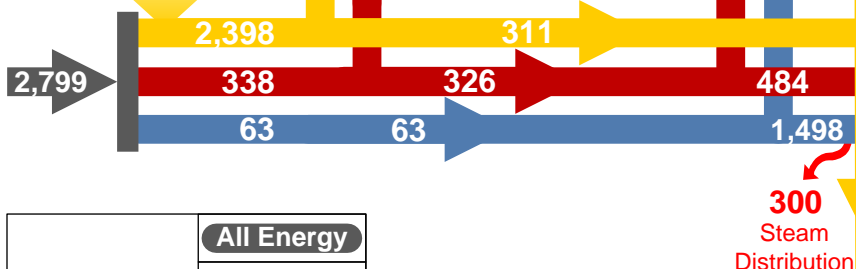
0.2 0.2

52.1 49.8

Steam Generation 451
Electricity Generation 57

Fuel Type	% of Total
Pulping Liquor or Black Liquor (byproduct fuel)	35%
Biomass	24%
Natural Gas	23%
Coal	10%
Distillate and Residual Fuel Oils	5%
Waste Oils/Tars and Waste Materials (byproduct fuel)	1%
Petroleum Coke (byproduct fuel)	1%
LPG and NGL	< 0.5%
Other Fuels	< 0.5%

Fuel Types



Process Energy

Process Heating

21.3 13.6

Process Cooling and Refrigeration

1.1 0.1

Other Process Uses

1.0 0.4

Electro-Chemical

0.6 0.0

Machine Drive

51.7 1.3

Machine-Driven Systems

Pumps	169
Fans	107
Compressed Air	25
Materials Handling	40
Materials Processing	115
Other Systems	75

75.6 15.4

Exhaust Losses*

191

4

1

3

100

194

Nonprocess Energy

Facility HVAC

4.7 1.3

Facility Lighting

3.3 0.0

Other Facility Support

0.9 0.1

Onsite Transportation

1.8 1.6

Other Nonprocess

0.1 0.1

10.6 3.1

37

21

1

14

0

20

Electricity Export

Energy Use (TBtu)

All Energy
Fuel
Electricity
Steam
Losses

Combustion Emissions (MMT CO₂e)

Offsite
Onsite
Total

Total = Onsite + Offsite

* Exhaust losses from process heating are not estimated

** Onsite, renewable, non-combustion generation contributes 3 TBtu

Data source: 2006 MECS

Published: August 2010, revised December 2010

Units:

TBtu = Trillion British Thermal Units

MMT CO₂e = Million Metric Tons Carbon Dioxide Equivalent

Feedstock energy not included

Energy values <0.5 TBtu shown as 0