



Natural Resources
Canada

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Solid biomass consumption in Canadian pulp and paper

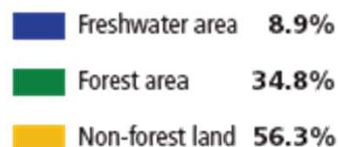
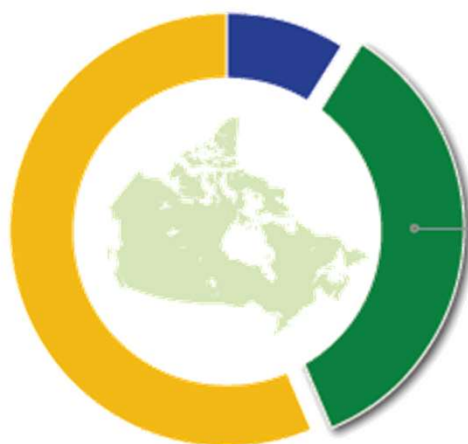
Presented to the APEC Workshop on Energy Statistics

Simon Préfontaine

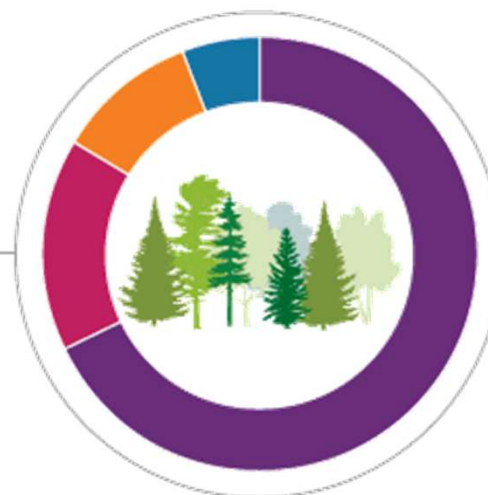
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How much forest does Canada have?

How much of
Canada is forest?



What is the composition
of Canada's forests?



Source: The State of Canada's Forests – Annual Report 2019, Natural Resources Canada



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How does the forest industry contribute to Canada's economy?

- The forest industry **employed about 216,000 people** across the country and **supported 300 municipalities** across Canada as a main source of jobs and revenue
- It accounted for **7% of Canada's total exports** in 2018 and generated **\$2.9 billion in revenue** for provincial, territorial and federal governments in 2017
- **GDP contribution of \$25.8 billion** in 2018

Source: The State of Canada's Forests – Annual Report 2019, Natural Resources Canada



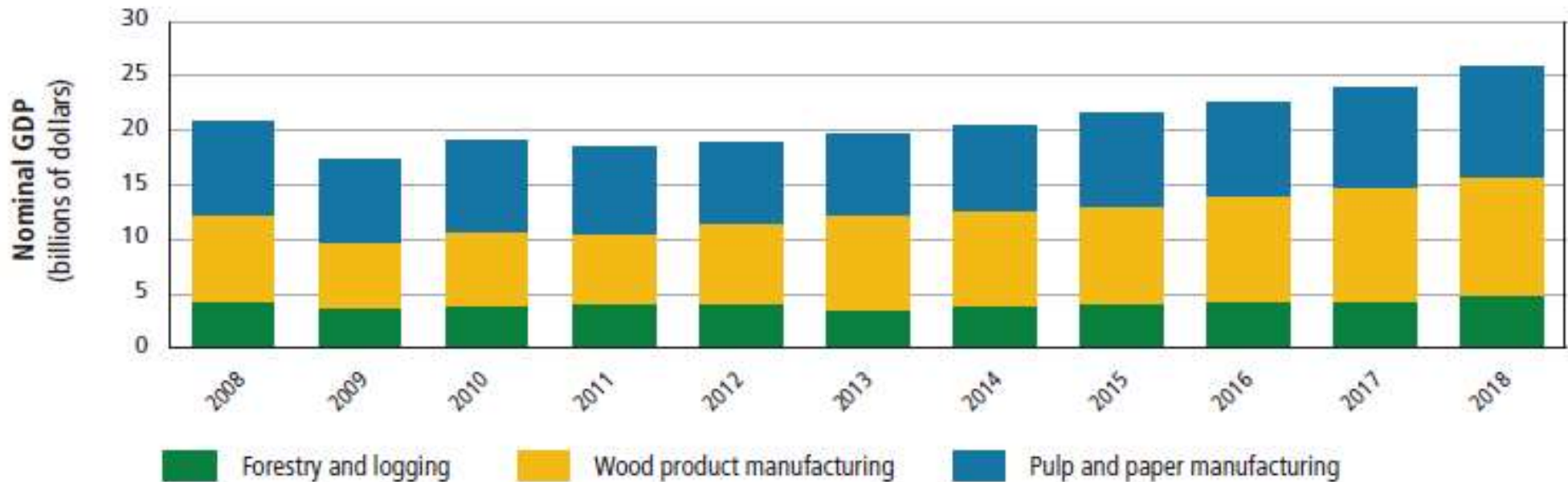
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How does the forest industry contribute to Canada's economy?

Canadian forest industry's GDP, 2008–2018



Source: The State of Canada's Forests – Annual Report 2019, Natural Resources Canada

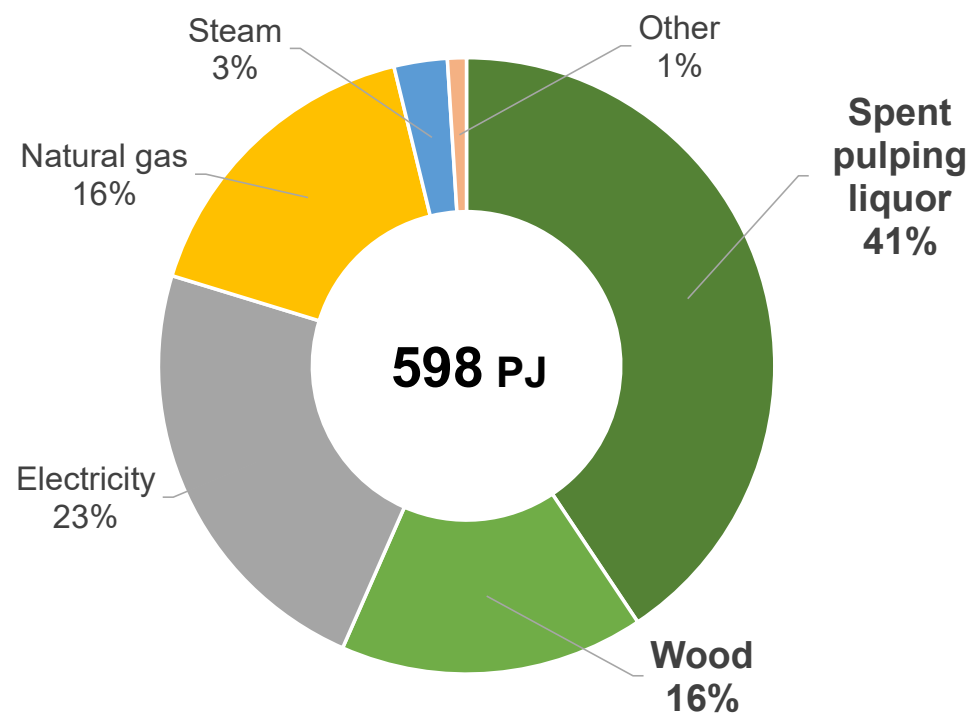


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and what fuels this industry?



Source: Statistics Canada Table: 25-10-0025-01

- Pulp and paper was the **largest energy consuming manufacturing sub-sector** in 2019 at 597 PJ.
- 6.5% of total secondary energy use.
- **57% of this was solid biomass**, primarily spent pulping liquor and wood.



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Data collection and estimation

- Collected through Statistics Canada's Annual Industrial Consumption of Energy Survey (ICE)
 - Target population is NAICS 31, 32 and 33 (ISIC 101 to 329)
 - Cross-sectional and stratified sample
 - Mandatory response
 - Imputation and estimate
 - External association (FPAC) data supplements the forest industry collection



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Partnering for success



Statistics
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Statistique
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Celebrating Five Years of Successful Partnership

- ✓ Gathering industry-wide reliable information to support data-driven decision making.
- ✓ Supporting improved understanding of how the forest sector works while streamlining reporting and providing high-quality, timely data to the federal government.



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- 5 year partnership
- Reduce response burden and improve quality
- Industry specific survey
- Clear and consistent



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ICE an important feeder survey

StatCan Energy Statistics Program Surveys and Reports

SURVEYS			
Energy Subject	Acronyms	RESD	Survey Name
Coal and Coke	MCOL	✓	Monthly Coal
	MCOK	✓	Monthly Coke
	ACM		Annual Coal Mines
Electricity	MELE		Monthly Electricity
	QELERS		Quarterly Electricity Disposition- Residential Sector
	AELE	✓	Annual Supply and Disposition of Electricity
	EPTG		Annual Thermal Power Generating Stations
	EPGS		Annual Thermal Generating Stations
	AEUFR		Annual Electricity Utility Final Report
Oil and Gas	MOILP		Monthly Oil Pipeline Survey
	MNGAS	✓	Monthly Gas Utilities/Transport and Distribution Systems
	ANGASD		Annual Natural Gas Disposition
	AOILPT		Annual Oil Pipeline Transport
	OGEX		Annual Oil and Gas Extraction
	ANGF		Annual Natural Gas Transport and Distribution
Refined Petroleum Products	MRPP	✓	Monthly refined petroleum products
	AEND	✓	Annual End Use
	SRPP	✓	Annual Secondary Distributors of Petroleum Products
Manufacturing Consumption	ICES	✓	Annual Industrial Consumption of Energy
REPORTS			
	MCONG	✓	Monthly Crude Oil and Natural Gas Production – MOILP, MNGAS, MRPP, provincial and National Energy Board (NEB) data
	MOILS	✓	Monthly Oil Sands Project – Alberta Energy Regulator (AER) administrative data
	RESD		Report on Energy Supply and Demand- above checked survey data and NEB data

Report on Energy Supply and Demand (RES D) is the backbone of Canada's reporting on energy balances



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Reporting Renewable Energy Balances

- Canada reports using the IEA Renewables Annual Questionnaire
- ICE data is used for manufacturing sector energy consumption
- Must also take into account *total* production, and trade
 - Energy consumption of solid biomass (residential, industrial, utility) used as proxy for production
 - Plus imports, minus exports
- Allocated to Total Final Consumption by sector based on data sources



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Reporting Renewable Energy Balances

Flow	Variables	Source
Production	industrial wood waste and pulping liquor consumption + residential firewood fuel use + wood pellet production + solid biomass used in energy transformation (main activity electricity generation)	Statistics Canada ICE OEE/ECCC NRCan CFS Statistics Canada AELE
Trade	imports and exports of fuel wood	Customs trade (HS)
Total consumption	Production + Imports - Exports	
Consumption by sector		
Transformation	Electricity generation using solid biomass	Statistics Canada AELE
Residential	Residential firewood fuel use	OEE/ECCC
Pulp and Paper	wood waste and pulping liquor consumption	Statistics Canada ICE



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Reporting Renewable Energy Balances

- Challenges

- RESD limitations
- Based on an assortment of different data sources
- Conversion from natural units to energy



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- [NRCan – The State of Canada's Forests 2019](#)
- [Statistics Canada – Energy Consumption in Manufacturing \(Summary\)](#)
- [Statistics Canada – Energy Consumption in Manufacturing \(Data tables\)](#)
- [Statistics Canada ICE – Definitions, data sources and methods](#)
- [Statistics Canada ICE - Questionnaire](#)
- [FPAC – Partnering for Success: The Annual ICE Survey](#)



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