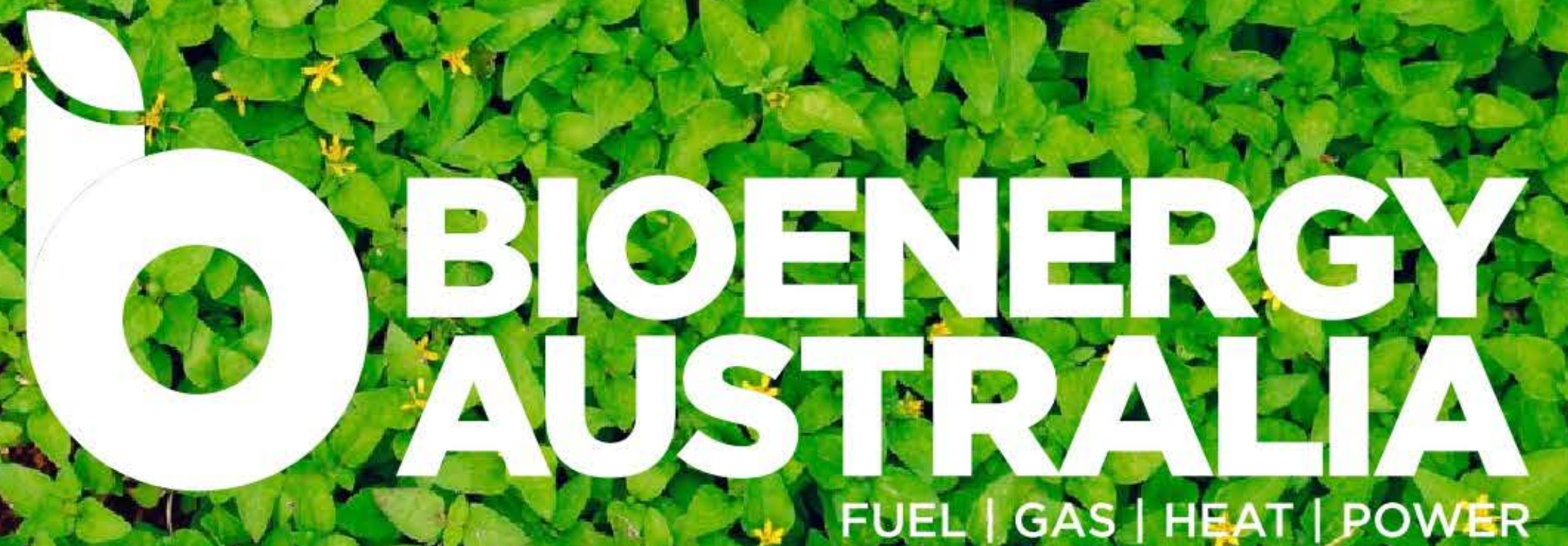


BIOENERGY IN AUSTRALIA

SHAHANA MCKENZIE
CEO BIOENERGY AUSTRALIA



OUR MEMBERS

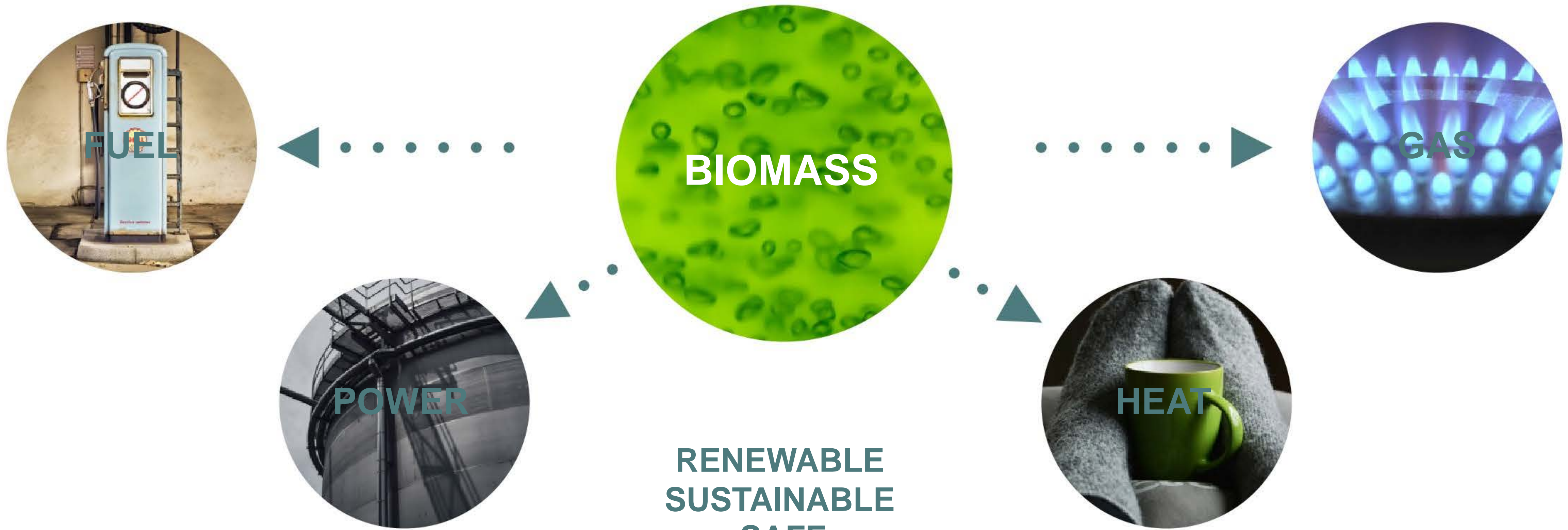


- STATE GOVERNMENT DEPARTMENTS
- PRODUCERS OF BIOFUELS
- LARGE CORPORATIONS QANTAS, AGL, VIRGIN
- UNIVERISTIES
- DEVELOPERS OF BIOENERGY PROJECTS
- TECHNOLOGY PROVIDERS
- EXPERT CONSULTANTS
- FINANCE SOLUTION PROVIDERS

**CORPORATE
GOVERNMENT
COMMUNITY
INDIVIDUAL**



WHAT IS BIOENERGY



RENEWABLE
SUSTAINABLE
SAFE

SOURCED AFFORDABLY AND LOCAL

ABOUT BIOENERGY AUSTRALIA



**AUSTRALIA LAGS BEHIND THE
WORLD WHEN IT COMES TO
BIOENERGY**

**WE ARE COMMITTED TO
ACCELERATING AUSTRALIA'S
BIOECONOMY**

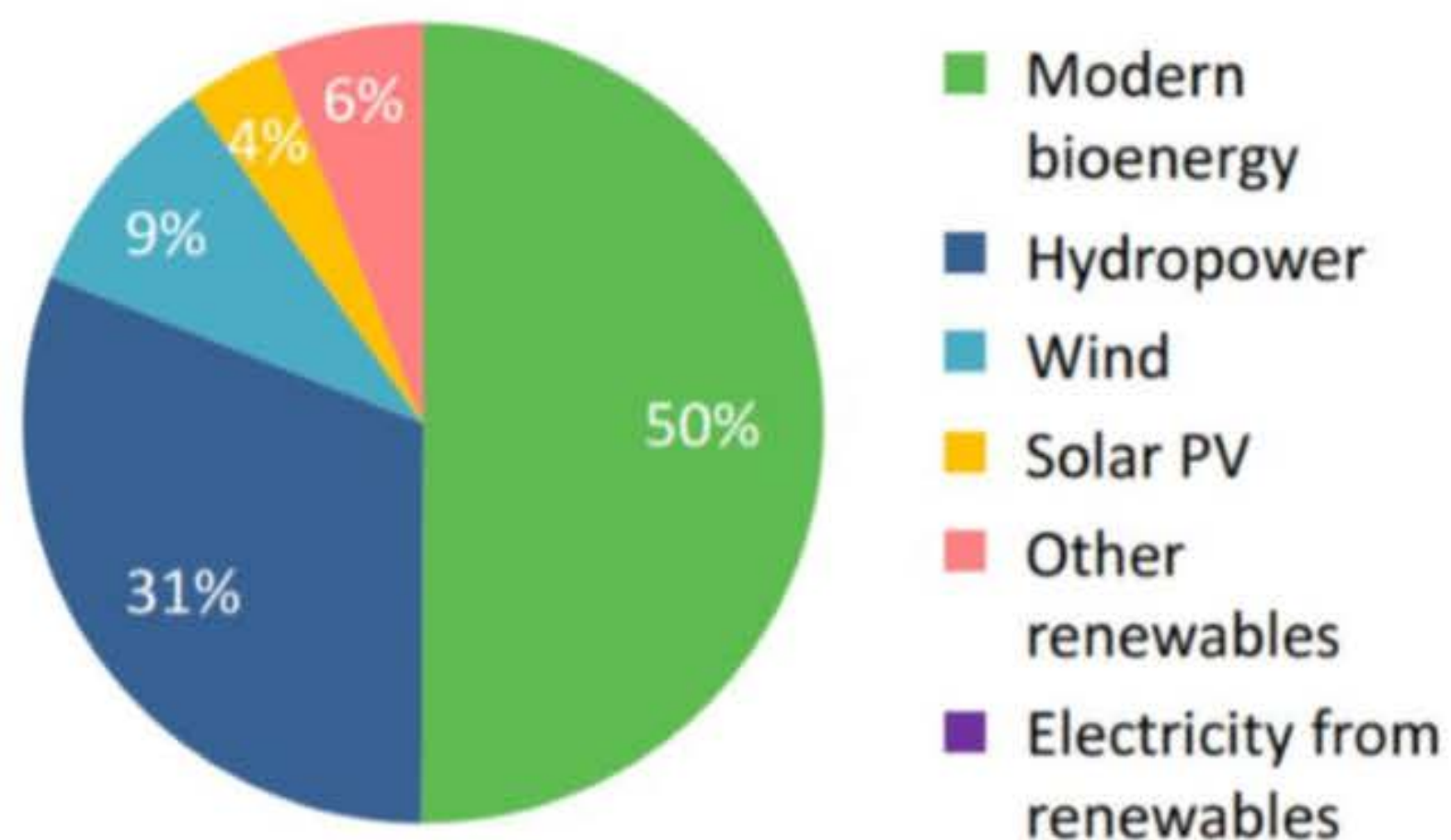
**WE ADVOCATE
WE CAMPAIGN
WE INFORM
WE CONNECT**

HOW DO WE COMPARE?



Modern bioenergy: the overlooked giant of renewables

Total final energy consumption from renewables, 2017



Total final energy consumption from renewables by sector, 2017

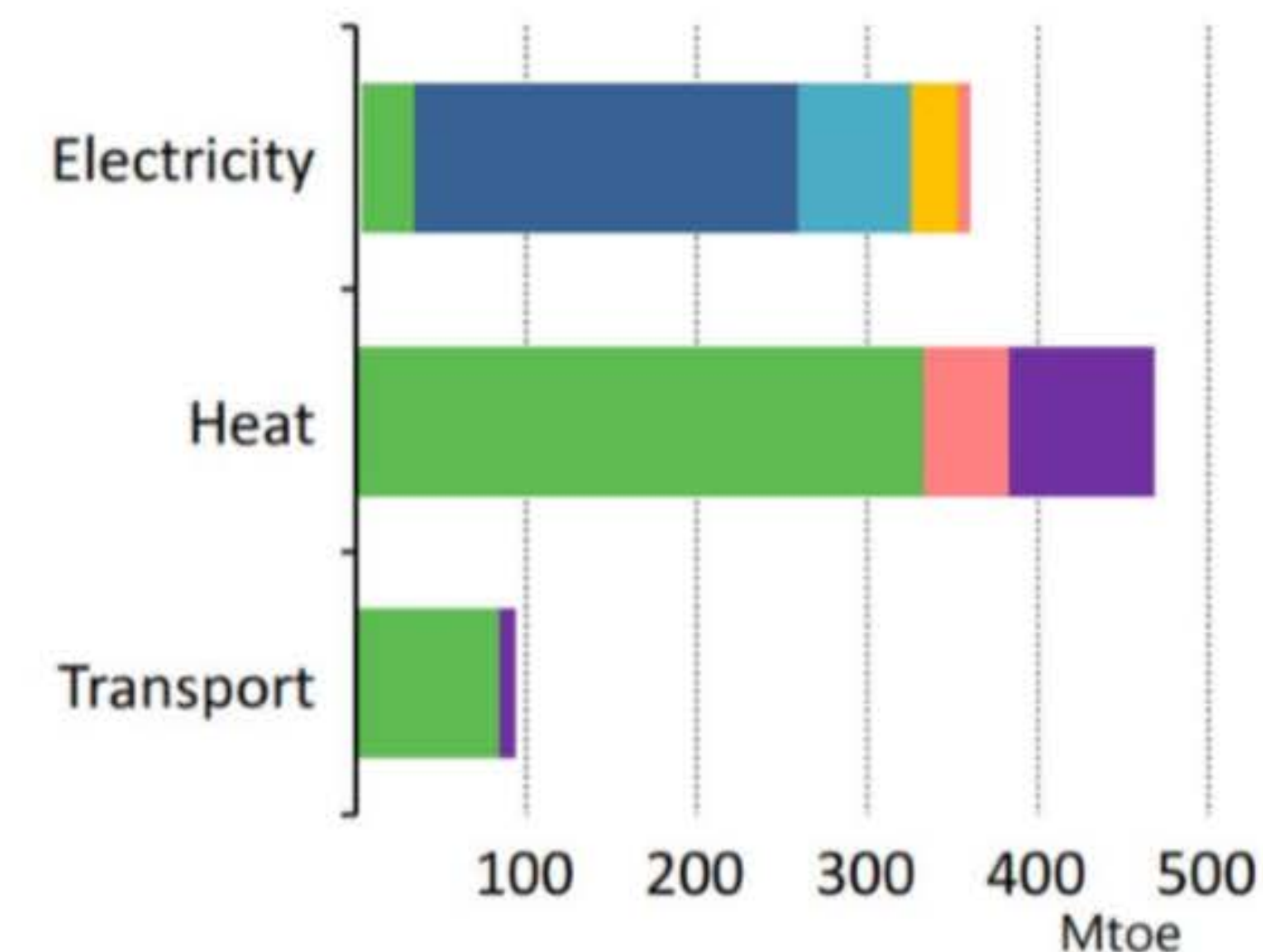
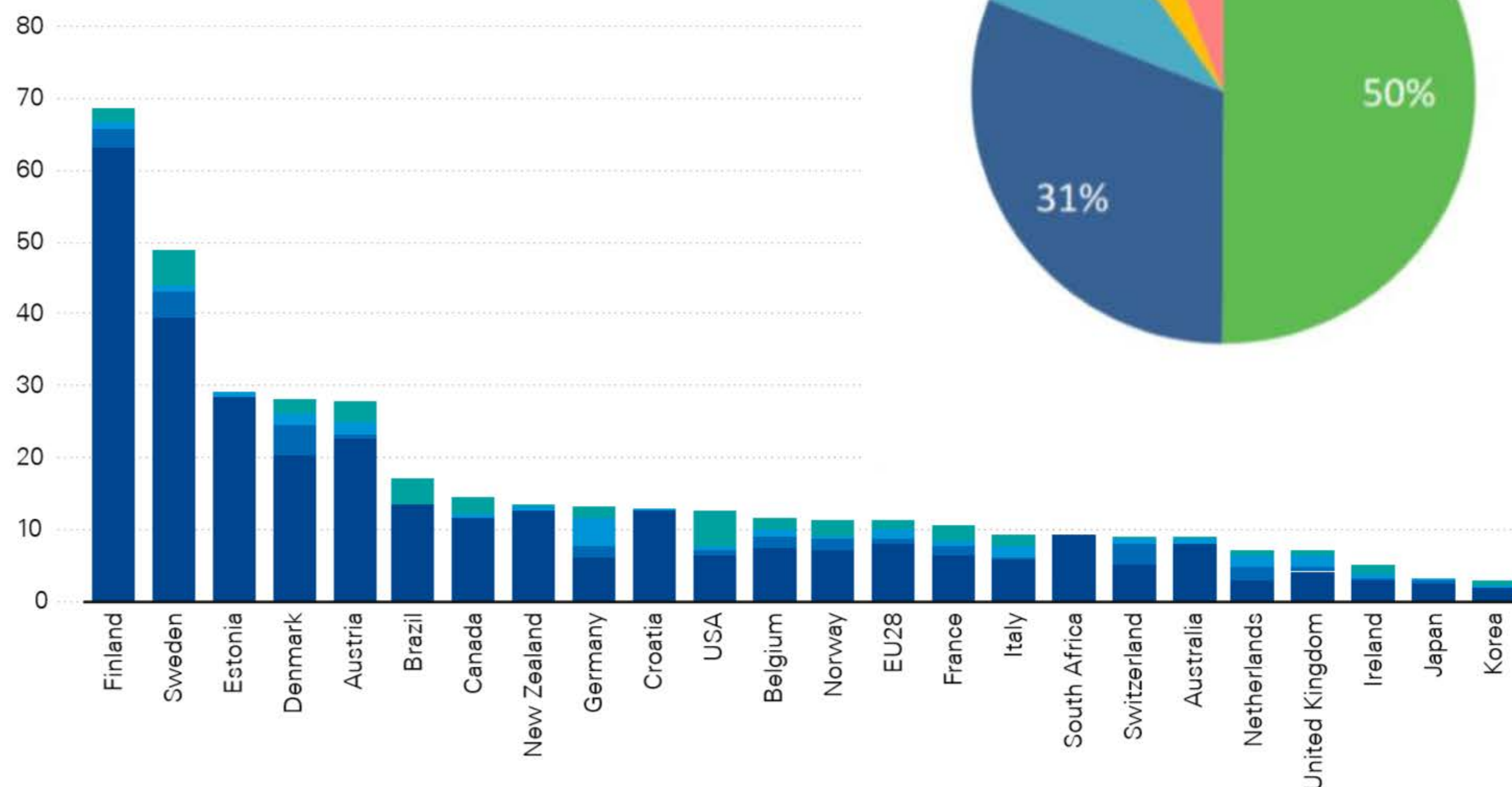


Figure 8: Total primary energy source from bioenergy, per capita



WHY BIOENERGY?



- ENHANCED ENERGY SECURITY THROUGH DOMESTIC BIOFUEL PRODUCTION & DIVERSIFICATION OF BASELOAD
- REGIONAL EMPLOYMENT, INVESTMENT AND ECONOMIC DEVELOPMENT
- GREATER UTILITISATION OF WASTE STREAMS
- REDUCTION IN GREENHOUSE GAS EMISSIONS



International Energy Agency

[About](#)

[News & Events](#)

[Analysis](#)

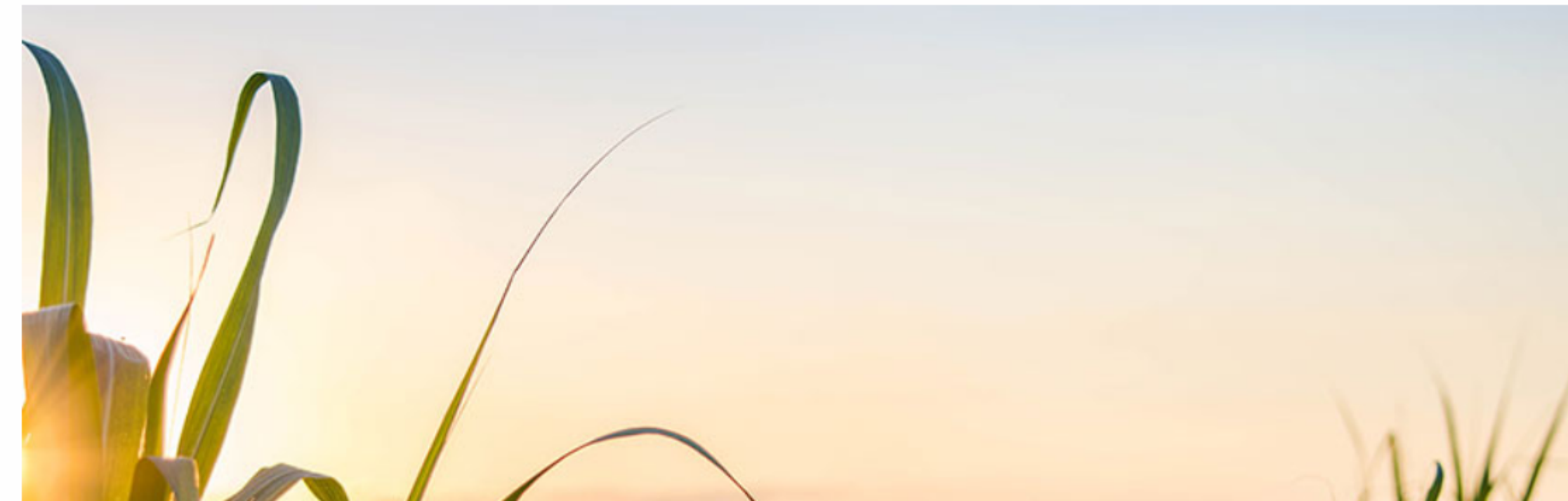
[Our Work](#)

[Countries](#)

[Home](#) » [Newsroom](#) » [News](#) » 2018 » October

Modern bioenergy leads the growth of all renewables to 2023, according to latest IEA market forecast

8 October 2018



GLOBAL DRIVERS - AVIATION



AS PART OF THE GLOBAL DECARBONISATION PROCESS, THE INTERNATIONAL AVIATION INDUSTRY HAS COMMITTED TO REDUCING ITS GREENHOUSE GAS EMISSIONS. IN 2009 THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) SET THE FOLLOWING AMBITIOUS TARGETS:

- A 1.5% ANNUAL FUEL EFFICIENCY IMPROVEMENT BETWEEN 2010 AND 2020;
- CARBON NEUTRAL GROWTH FROM 2020; AND
- A 50% REDUCTION IN NET EMISSIONS BY 2050 COMPARED TO 2005 LEVELS.

11 September 2018 | Sustainability

Virgin Australia leads Australian first with delivery of sustainable aviation fuel at Brisbane Airport



GLOBAL DRIVERS - MARITIME



IN APRIL 2018 THE IMO INTRODUCED A STRATEGY TO REDUCE THE GHG EMISSIONS FROM THE SHIPPING INDUSTRY. IT INCLUDES A 50% REDUCTION IN EMISSIONS BY 2050.

LOW CARBON AND CARBON NEUTRAL FUELS FORM A KEY PART OF THEIR EMISSIONS REDUCTION STRATEGY



The shipping sector is finally on board in the fight against climate change

April 18, 2018 3.46pm AEST

DOMESTIC DRIVERS - GAS

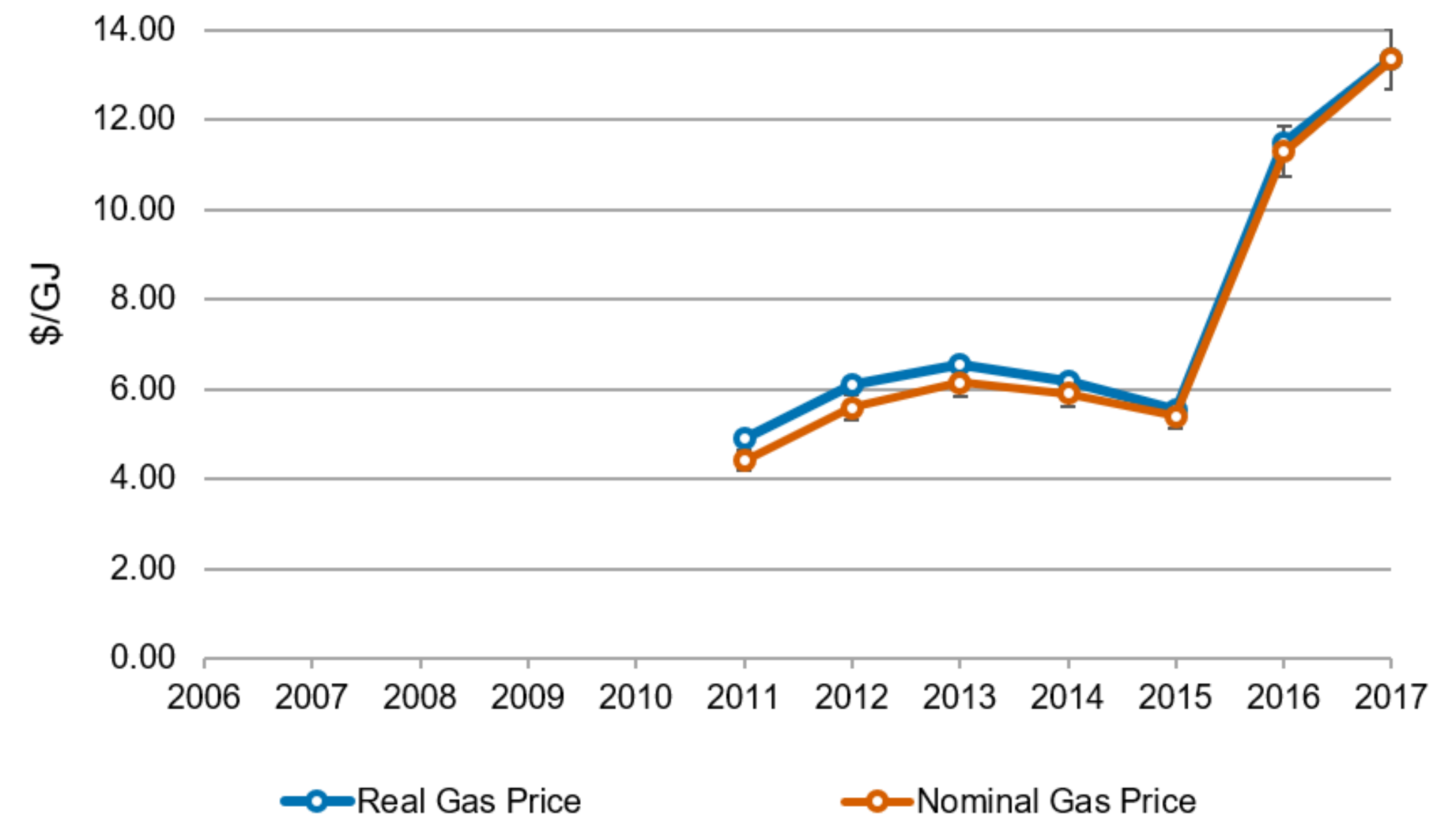


SMALL INDUSTRIAL BUSINESSES ARE STRUGGLING TO STAY ALIVE WITH THE DRAMATIC INCREASE IN GAS PRICING OVER THE LAST 3 YEARS.

BIOMASS IS AN IDEAL REPLACEMENT FOR HEAT RELATED ENERGY, AND CAN BE USED TO SUBSTITUTE GAS BOILERS.

MSM MILLING IN MANILDRA, SAWMILLS, INDUSTRIAL PROCESSING FACILITIES ARE SWITCHING TO BIOMASS

Small Industrial Customer (<1PJ pa) - Average Total Gas Price Delivered to Melbourne, Victoria



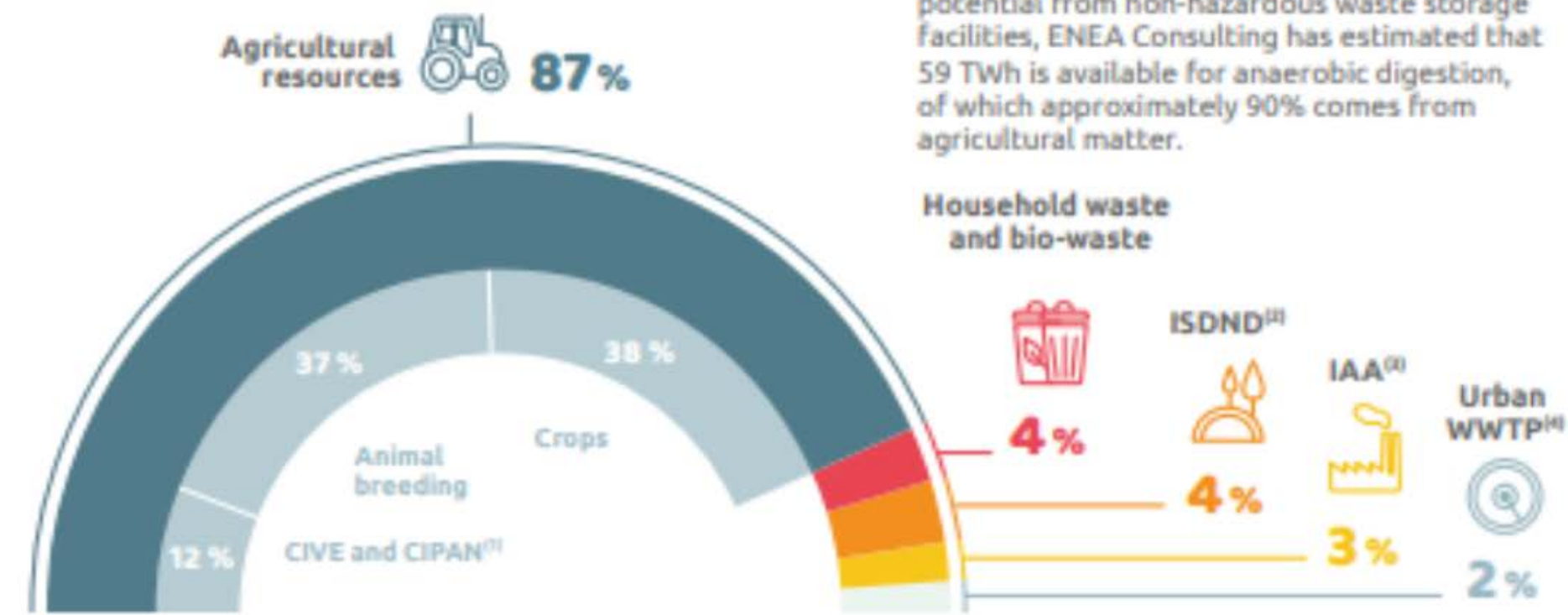
DOMESTIC DRIVERS – GREEN GAS

THE RACE IS ON TO DELIVER FIRST BIOGAS INTO THE AUSTRALIAN GAS INFRASTRUCTURE NETWORK

FRANCE HAS 59 SITES INJECTING AND 297 ON THE WAITLIST FOR CONNECTION. AUSTRALIA HAS ZERO.



Figure 6
Agriculture, the leading contributor to biomethane production in 2030



By analysing the studies on resources carried out for the ADEME [p. 11](#) et [p. 12](#), and assessing the potential from non-hazardous waste storage facilities, ENEA Consulting has estimated that 59 TWh is available for anaerobic digestion, of which approximately 90% comes from agricultural matter.

(1) CIVE: intermediate crop for energy purposes. CIPAN: intermediate nitrate-trap crops
 (2) ISDND: non-hazardous waste storage facility
 (3) IAA: food industry
 (4) WWTP: Waste water treatment plant.

DOMESTIC DRIVERS – TRANSPORT



EMISSIONS FROM THE TRANSPORT SECTOR
HAVE INCREASED BY 22% SINCE 2005

40% MORE DEATHS FROM TRANSPORT RELATED
POLLUTION THAN THE NATIONAL ROAD TOLL

AUSTRALIA HAS SOME OF THE DIRTIEST FUEL OF
THE OECD NATIONS. PARTICULARLY RELATING TO
SULFUR CONTENT IN UNLEADED FUELS

Role of renewable energy in transport energy consumption (2016)

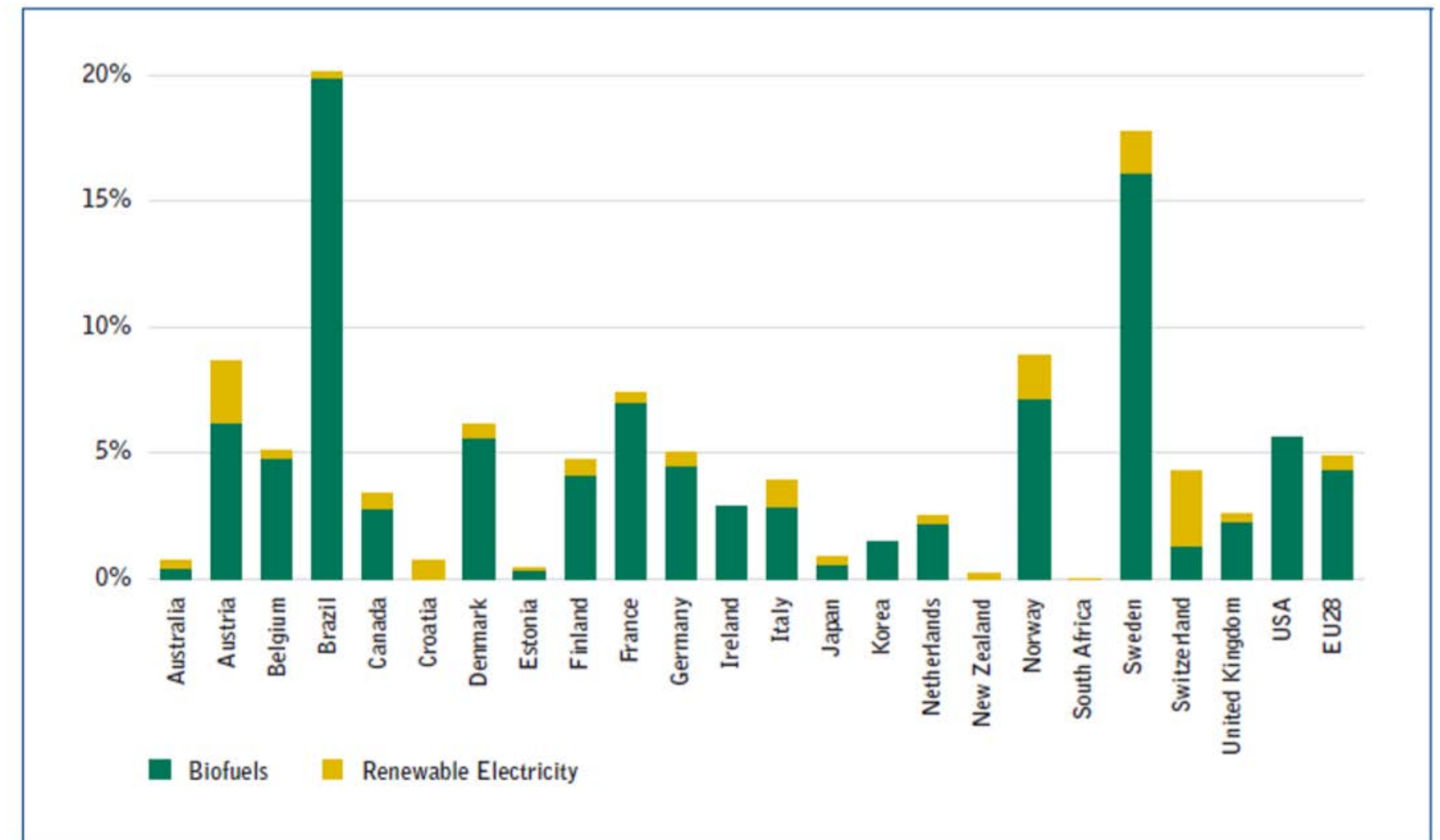


Figure 4: The role of biofuels and renewable electricity in transport energy consumption, in year 2016.
Source: 2018 World Energy Balances © OECD/IEA

DOMESTIC DRIVERS – FUEL SECURITY



Australia has significant fuel security issues

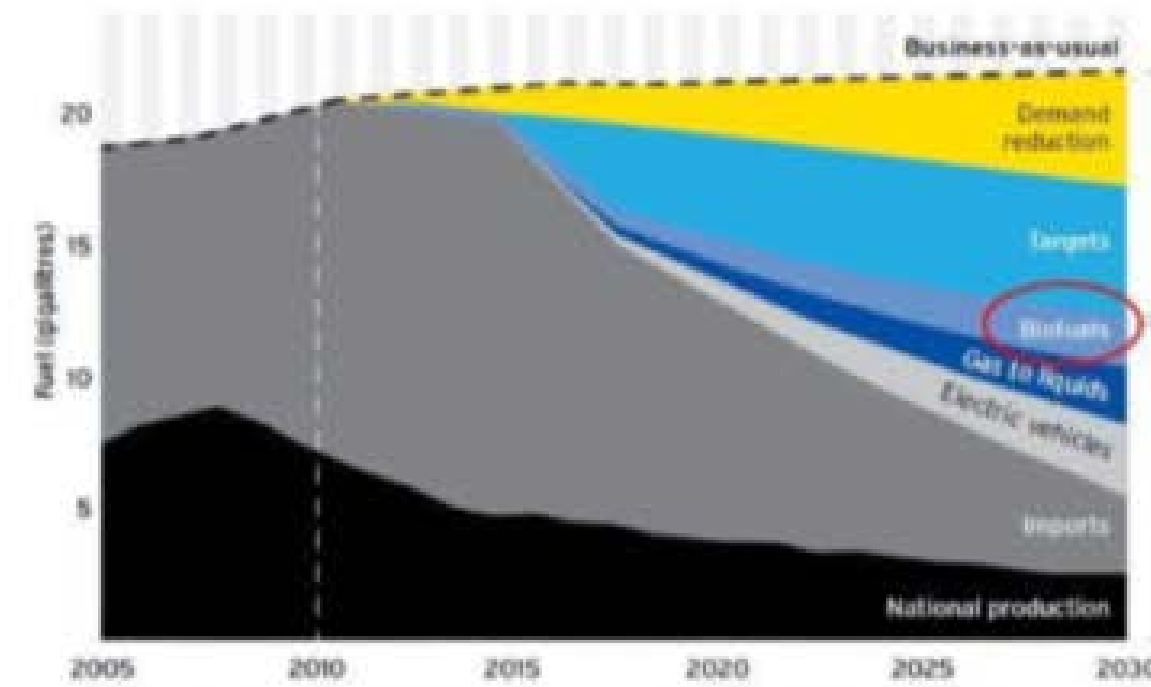
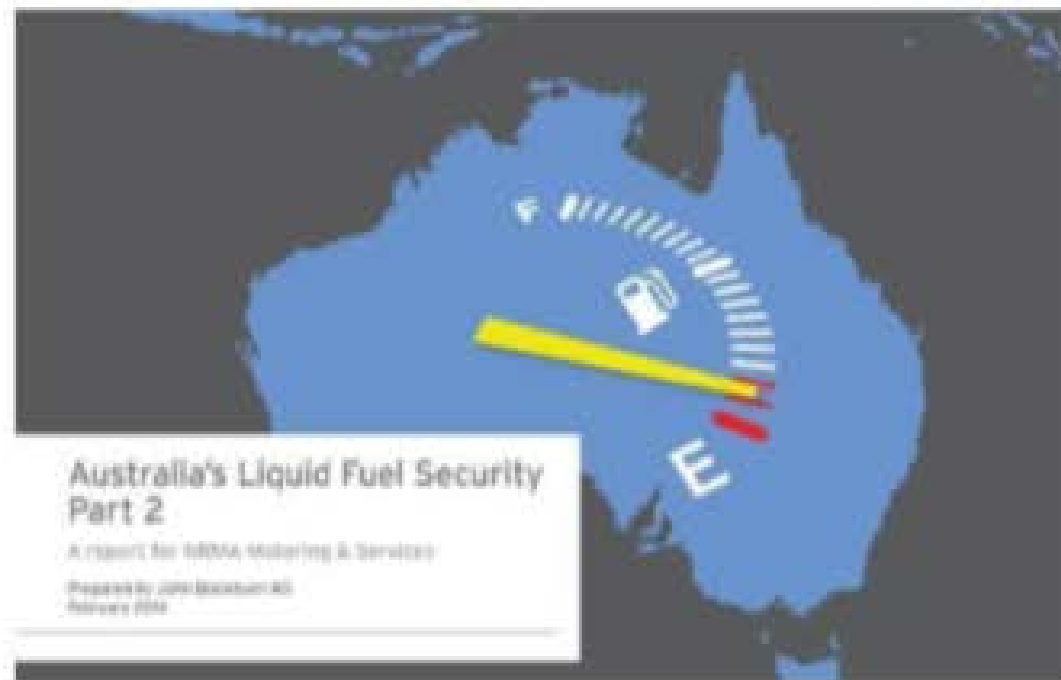


Figure 10: Proposed contribution of demand reduction, targets and alternative fuels to a reduction in import dependency

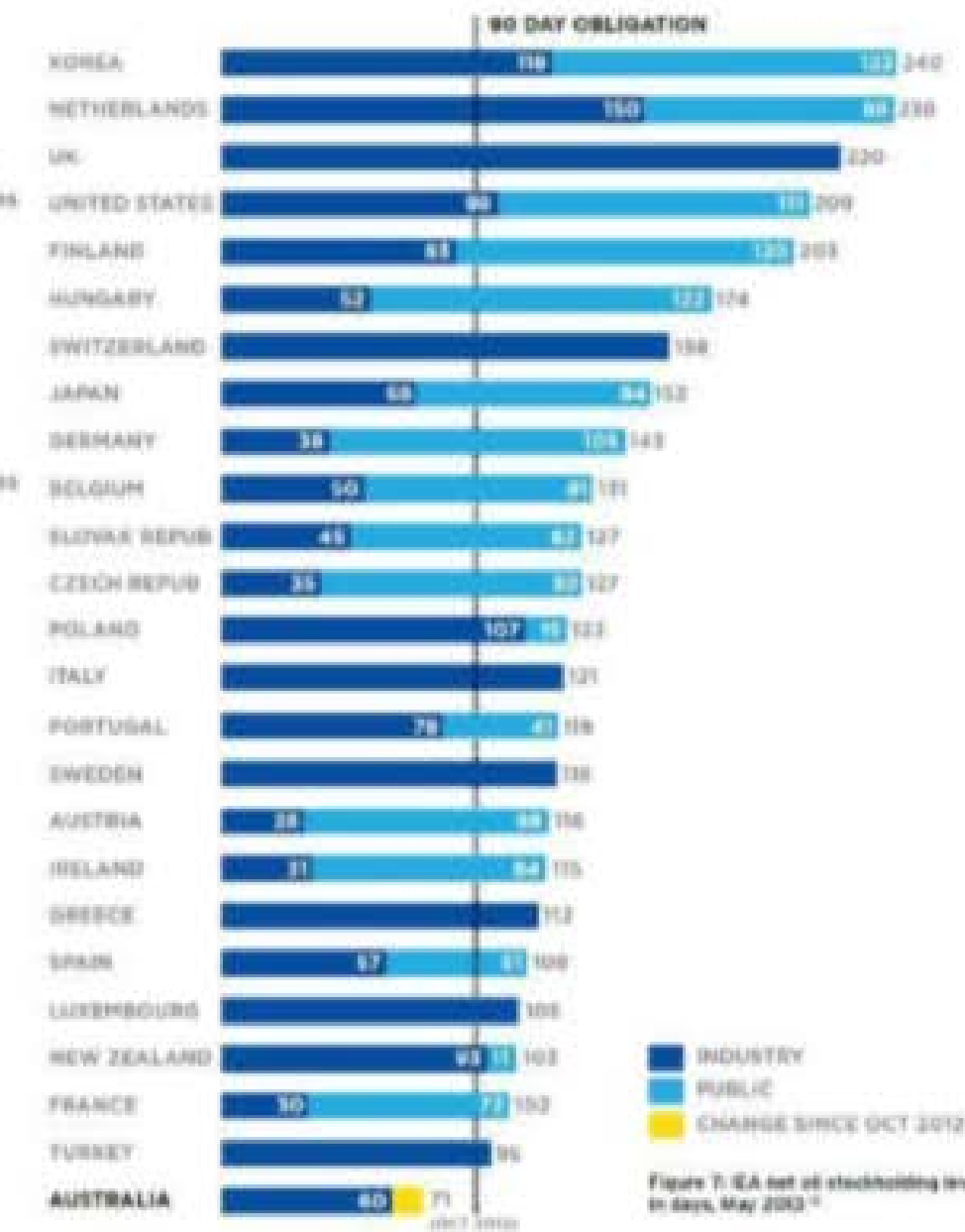


Figure 7: EA net oil stockholding levels in days, May 2013

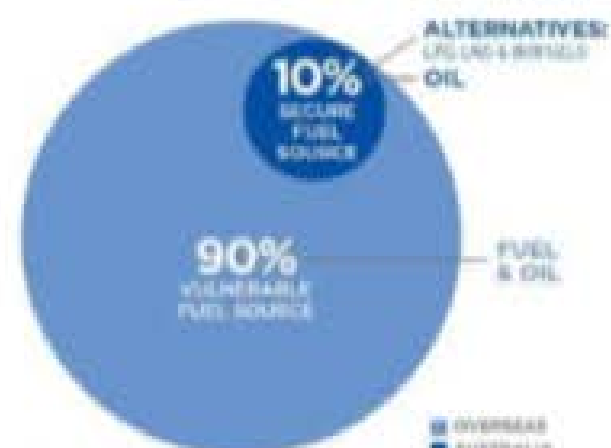


Figure 2: Fuel sources today



Figure 3: Decline in Australian refineries



Figure 4: Projected Australian fuel production and stockholding decline

Australia's worsening liquid fuel security problem

90% reliance on imported oil

Only OECD country not to have recommended fuel stockholdings

BIOENERGY STATE OF THE NATION - KPMG



AS EXPECTED SOUTH AUSTRALIA IS PUNCHING ABOVE ITS WEIGHT IN RENEWABLES!

POLICY DEVELOPMENT AND EDUCATION WERE THE STAND OUT REASONS FOR THE POSITION

Evaluation criteria	QLD	NSW	VIC	SA	WA	ACT	TAS	NT
Criteria 1 Policy development and effectiveness	✓✓	-	✓✓	✓✓	-	✓	✓	✓
Criteria 2 Bioenergy project development	✓	✓	✓	✓	✓	✓	✓	-
Criteria 3 Technology and feedstock diversity	✓	✓	✓	✓	✓	-	✓	-
Criteria 4 Sustainability guidance	✓	-	-	-	-	-	-	-
Criteria 5 Advocacy and education	✓✓	-	✓✓	✓✓	-	-	-	-
Relative ranking between jurisdictions:	1	4	2	2	4	4	3	5

Table 2: Rating system

Bioenergy evaluation description	
✓✓✓	Meets all requirements.
✓✓	Meets the majority of requirements.
✓	Meets some of the requirements.
-	Most requirements are not being met.

BIOENERGY STATE OF THE NATION - KPMG



SOUTH AUSTRALIA SNAPSHOT

10 PROJECTS

80% MUNICIPAL WASTE

10% AGRICULTURAL RESIDUES

10% WOOD WASTE

Figure 6: Operating bioenergy projects by state and feedstock, as at September 2018²⁶

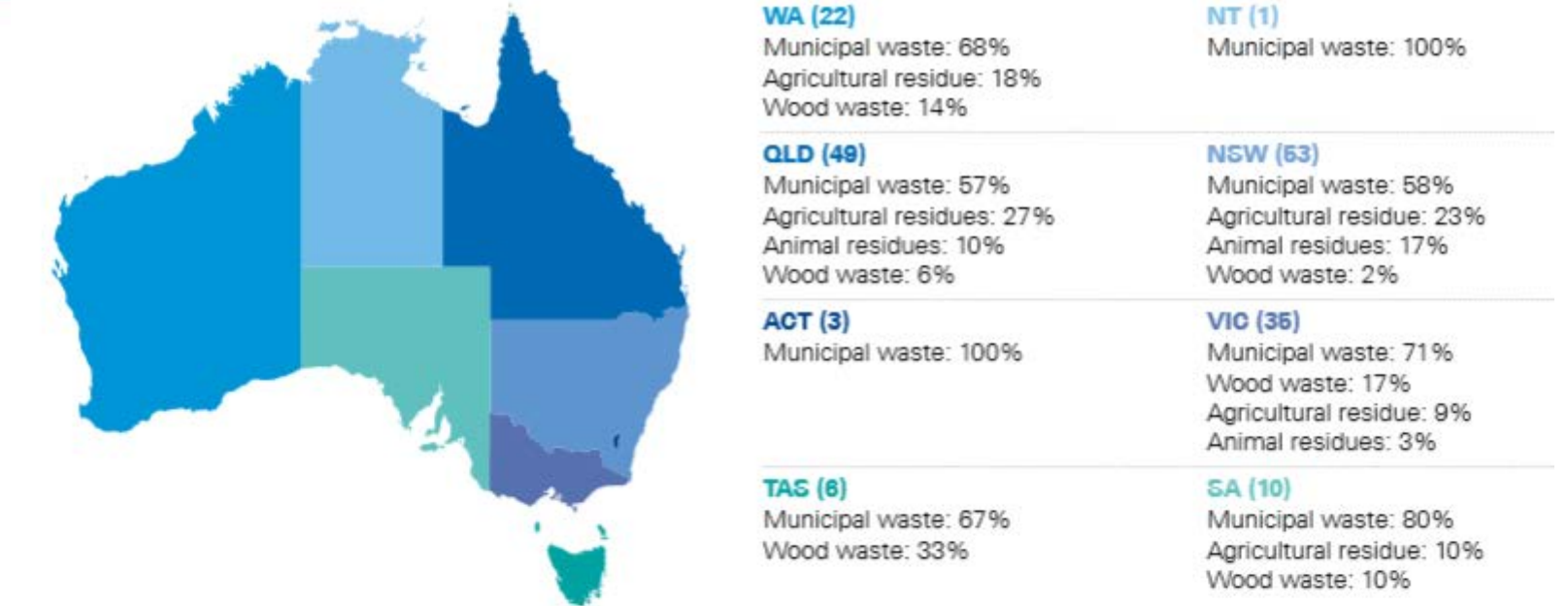
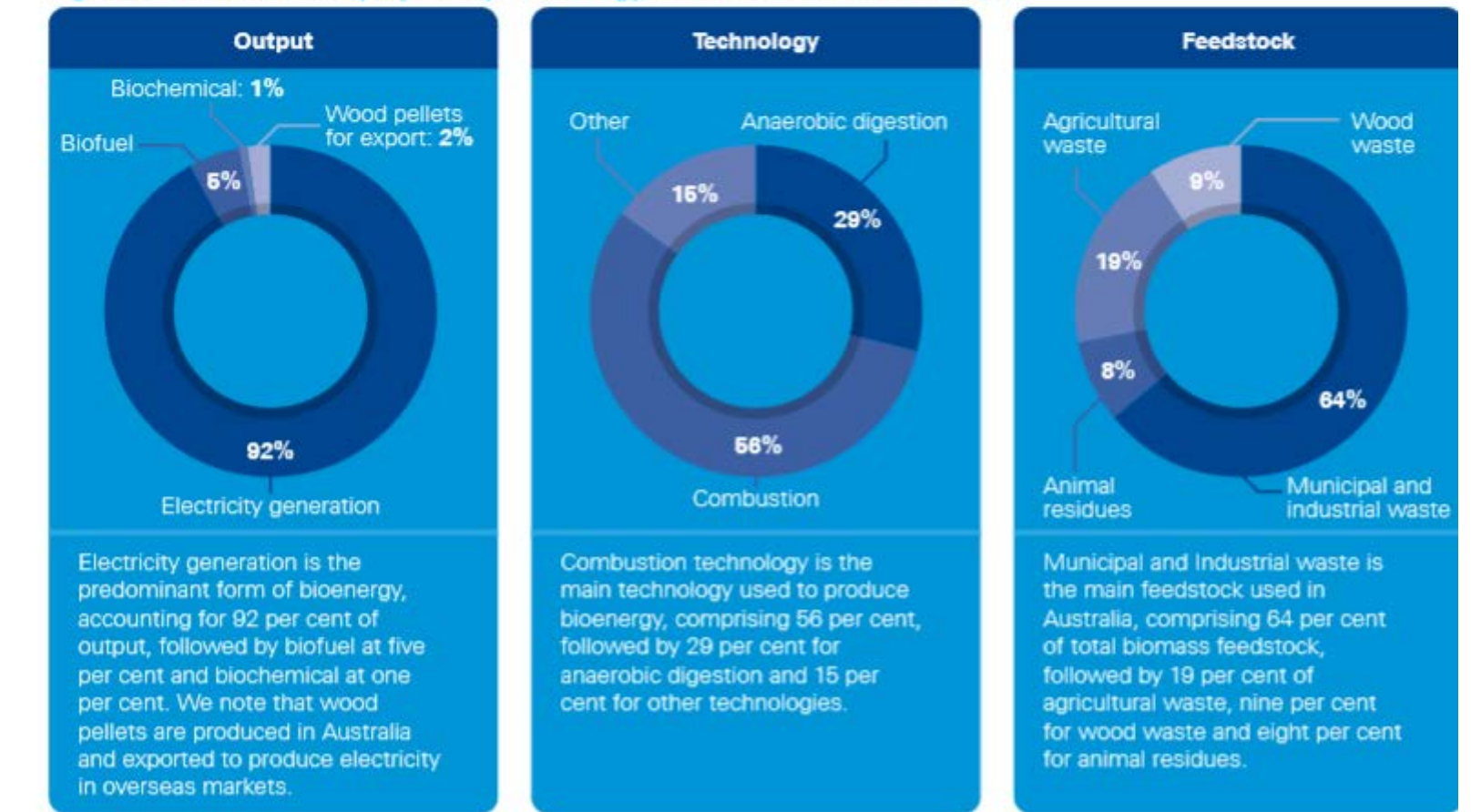


Figure 7: Commissioned projects by technology, feedstock and end-use, 2018²⁷



THANK YOU

SHAHANA MCKENZIE
CEO BIOENERGY AUSTRALIA



BIOENERGY
AUSTRALIA

FUEL | GAS | HEAT | POWER