

GLOBAL SMART GRID DRIVERS

IEA/SEAI, DUBLIN IRELAND

COLIN MCKERRACHER

12 SEPTEMBER 2012



CONTENTS

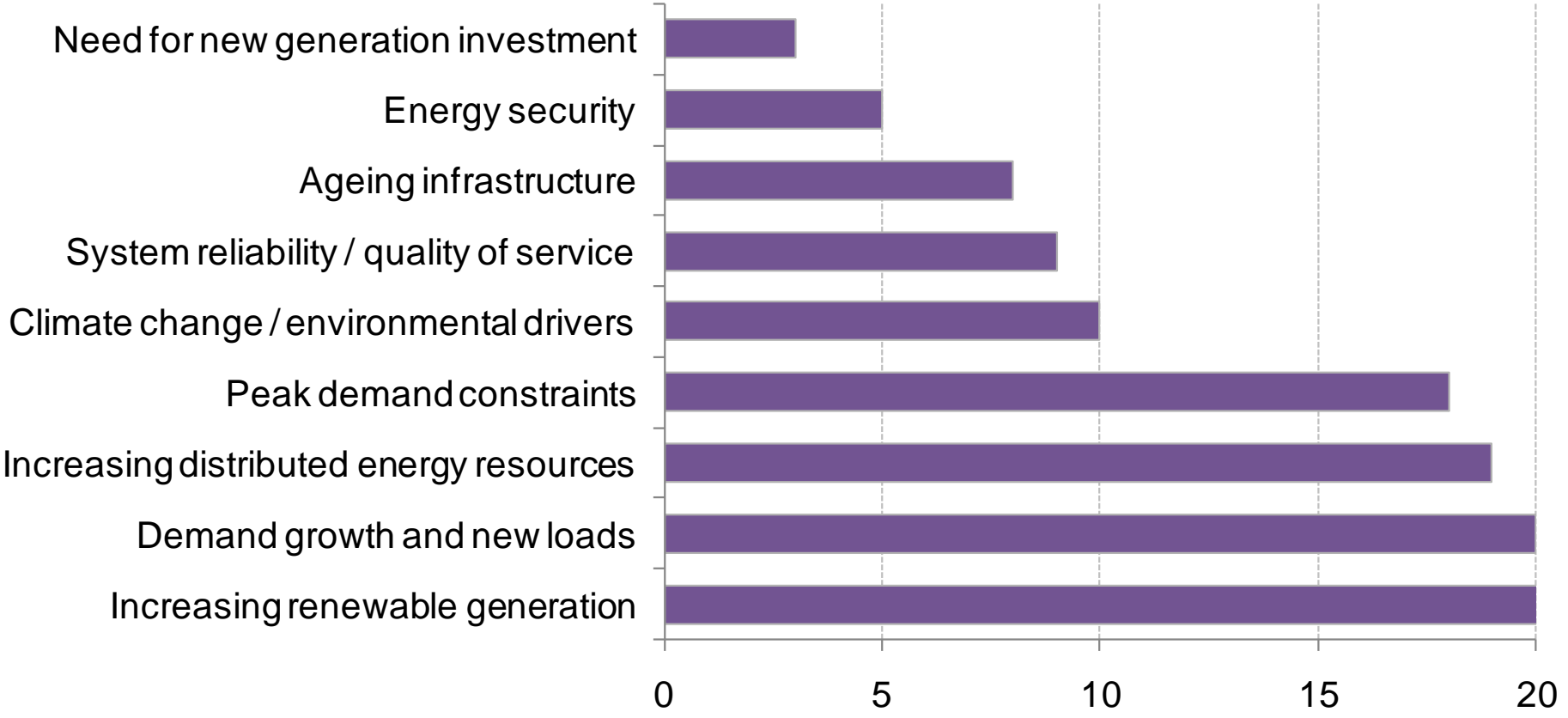
Smart grid: a global market

Smart grid drivers

Case studies



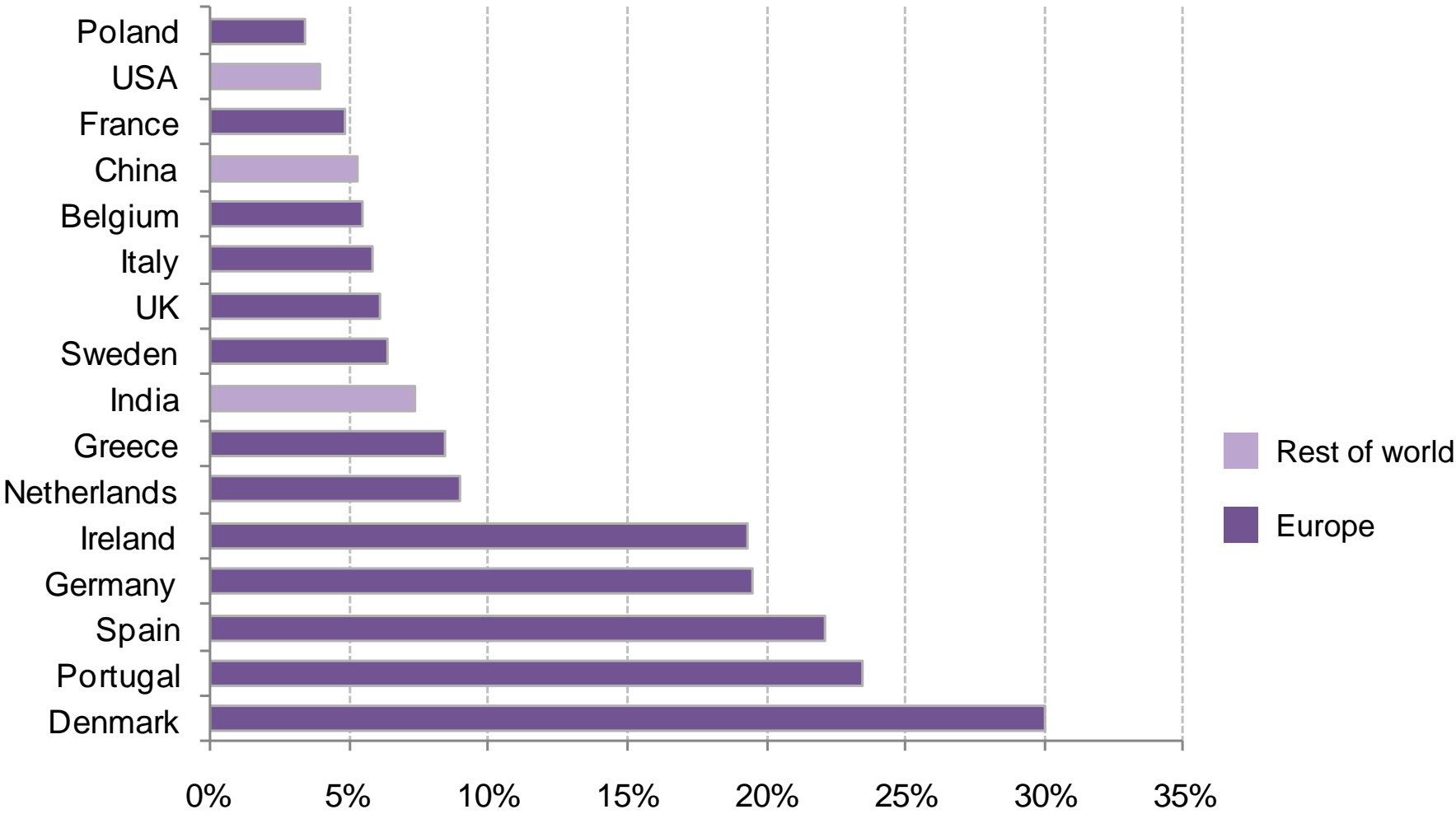
SMART GRID DRIVERS



Note: 26 responses received; total 114 votes cast. New loads = electric vehicles, heat pumps etc.

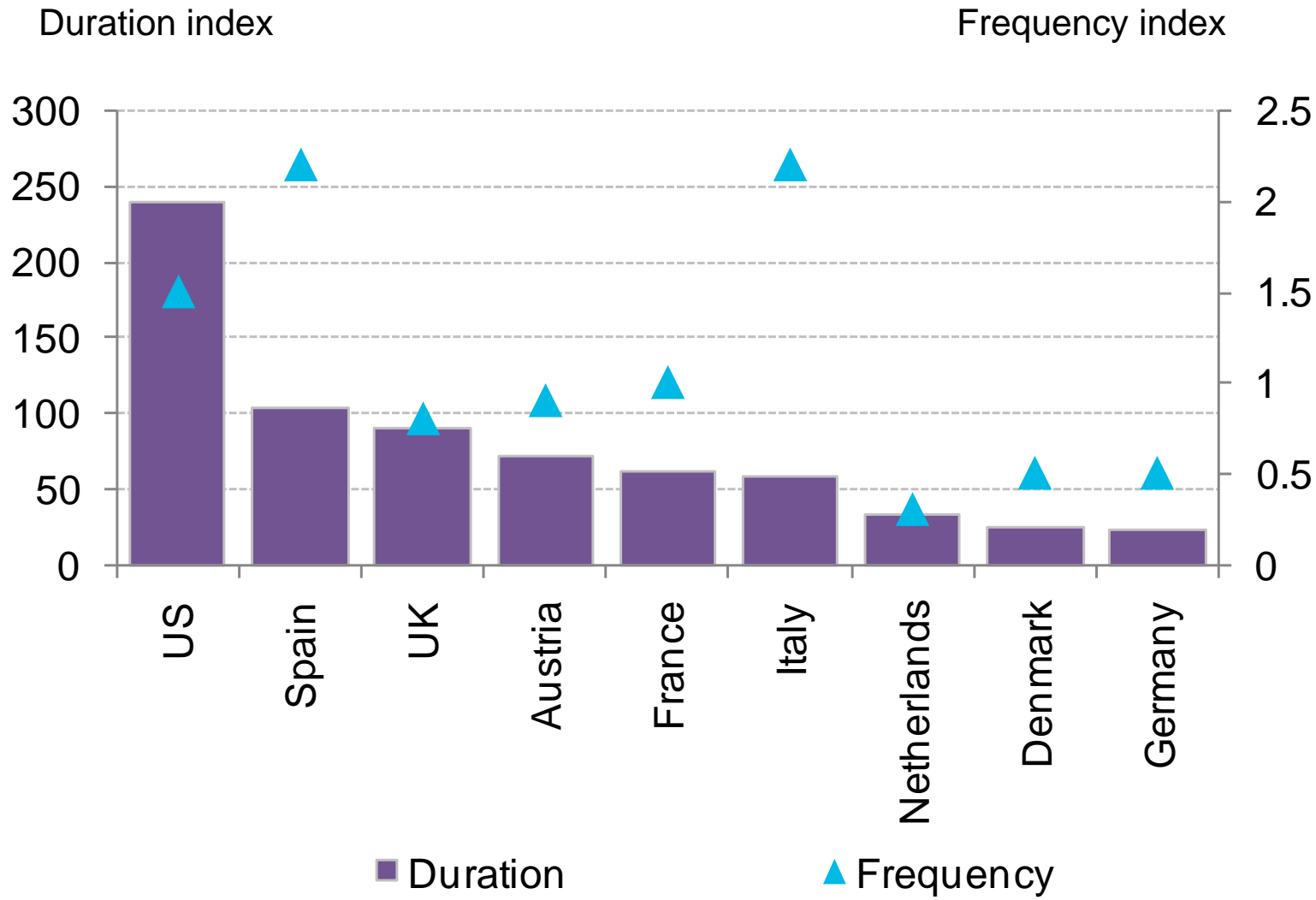
Source: BNEF Pre-Forum Survey.

DRIVERS: WIND PENETRATION (% OF INSTALLED CAPACITY)



Source: Bloomberg New Energy Finance.

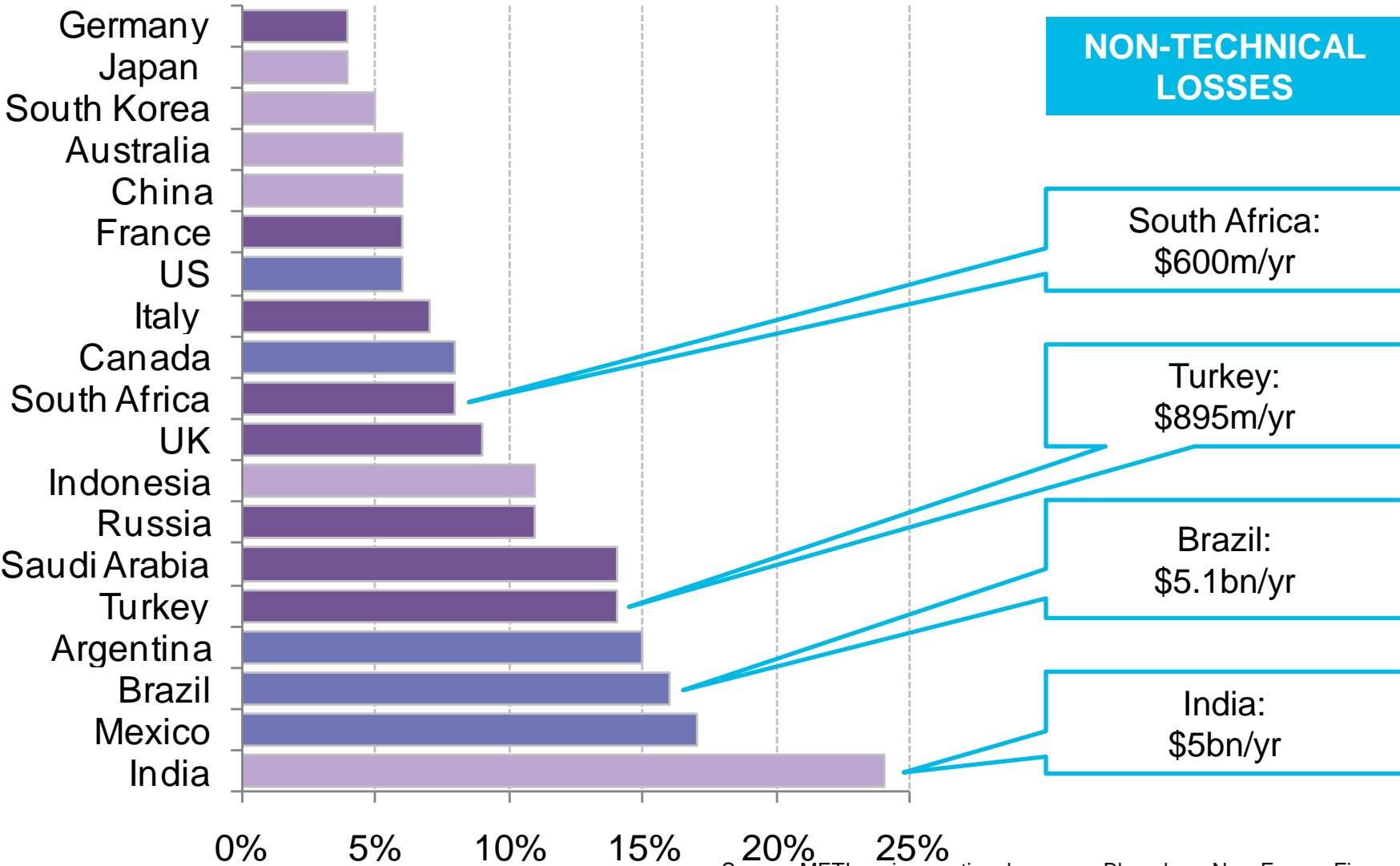
DRIVERS: SYSTEM AVERAGE INTERRUPTION INDICES BY COUNTRY



Note: 2007 data.

Source: CEER, Bloomberg New Energy Finance.

DRIVERS: TRANSMISSION & DISTRIBUTION LOSSES IN G20 NATIONS, 2009 (% OF POWER GENERATED)



Source: METI, various national sources, Bloomberg New Energy Finance.

SMART GRID DRIVERS AND PROJECT TYPES

	AMI	Distribution automation	HEMS/ BEMS	Energy storage	Demand response
Increasing renewable generation	√	√		√	√
Improved grid reliability	√	√		√	√
Reduce non technical losses	√	√			
EV integration			√	√	
Rising peak demand	√		√	√	
Ageing infrastructure	√	√	√	√	√

Source: Bloomberg New Energy Finance..

CONTENTS

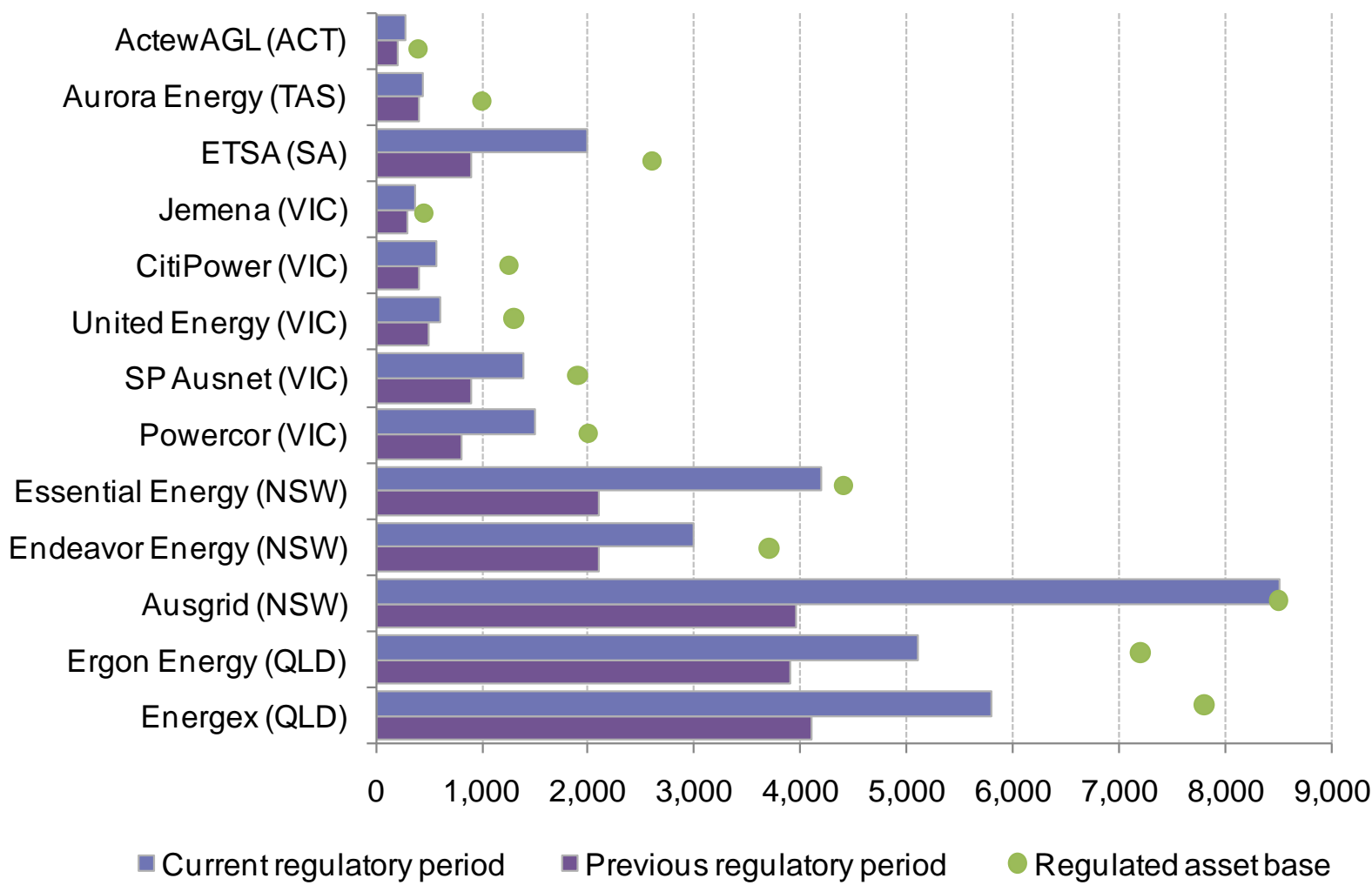
Smart grid: a global market

Smart grid drivers

Case studies



CASE STUDY- AUSTRALIA T&D INFRASTRUCTURE INVESTMENTS (AUD M)



Source: Bloomberg New Energy Finance..

SMART GRID DRIVERS: US VS. EUROPE

KEY DRIVERS FOR INVESTMENT



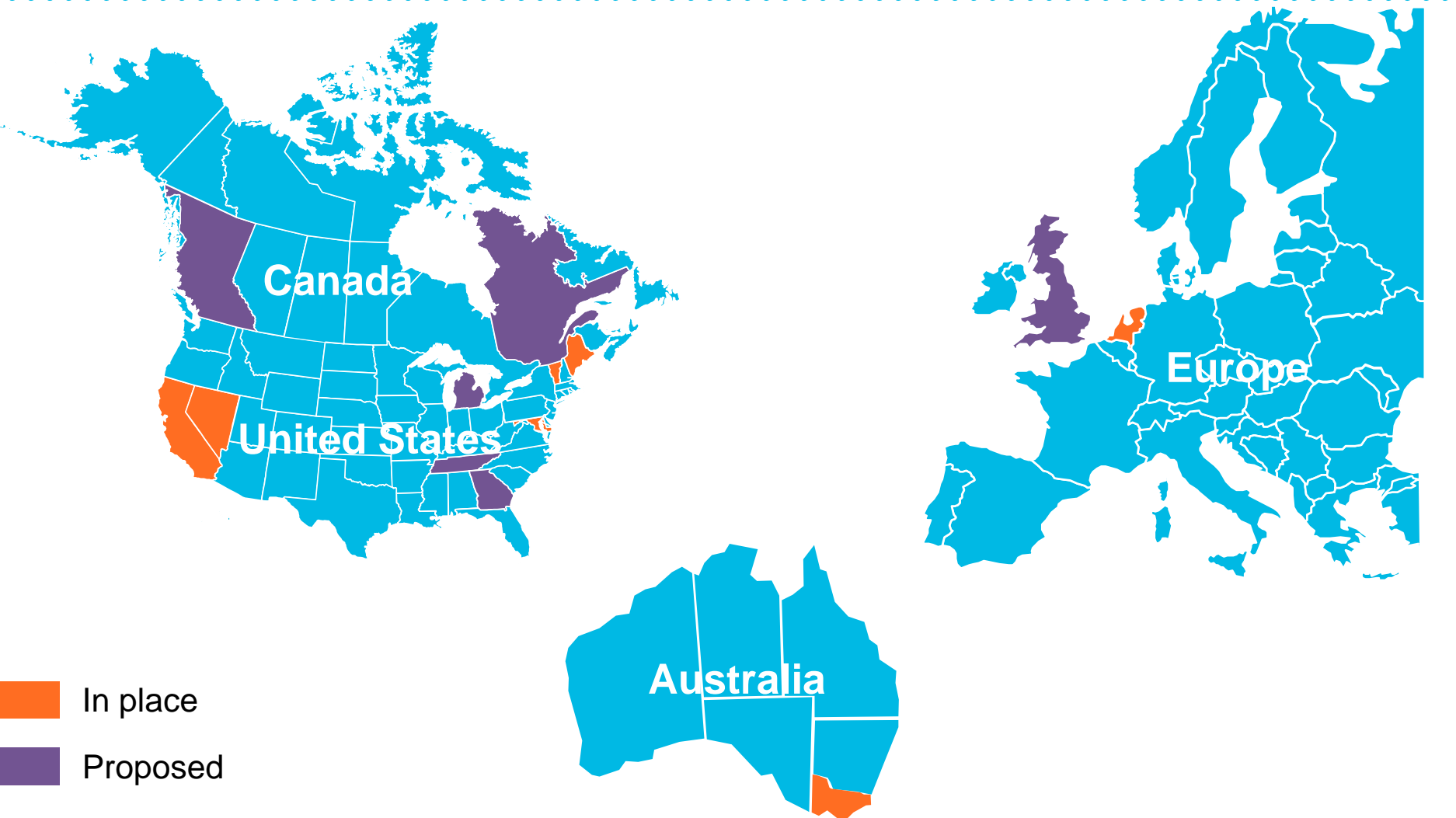
- 1 ECONOMIC**
 - \$4.5bn stimulus
 - Job creation
 - Tech companies
- 2 OPERATIONS**
 - Reduce opex
 - Improve asset mgmt
- 3 RELIABILITY**
 - Improve SAIDI/SAIFI
 - Manage major storms
- 4 ENERGY SECURITY**
 - Energy efficiency
 - Peak load management
 - Integrate RE / EV

- 1 CLEAN ENERGY**
 - Efficiency
 - RE and DER
 - Electric vehicles
- 2 LIBERALISATION**
 - Deregulation
 - Competition
 - Service innovation
- 3 MARKETS / INTEGRATION**
 - European power markets
 - European super-grid
- 4 OPERATIONS**
 - Reduce opex
 - Improve asset mgmt

BUT, THE PICTURE CAN CHANGE



STATES AND COUNTRIES WITH OPT-OUT PROVISIONS FOR CONSUMERS TO REFUSE SMART METERS



Note: No opt-out programme in UK, but regulator has clarified that consumers cannot be forced to have a smart meter. Australia opt-out is for TOU only.

Source: Bloomberg New Energy Finance

COPYRIGHT AND DISCLAIMER

This publication is the copyright of Bloomberg New Energy Finance. No portion of this document may be photocopied, reproduced, scanned into an electronic system or transmitted, forwarded or distributed in any way without prior consent of Bloomberg New Energy Finance.

The information contained in this publication is derived from carefully selected public sources we believe are reasonable. We do not guarantee its accuracy or completeness and nothing in this document shall be construed to be a representation of such a guarantee. Any opinions expressed reflect the current judgment of the author of the relevant article or features, and does not necessarily reflect the opinion of Bloomberg New Energy Finance. The opinions presented are subject to change without notice. Bloomberg New Energy Finance accepts no responsibility for any liability arising from use of this document or its contents. Bloomberg New Energy Finance does not consider itself to undertake Regulated Activities as defined in Section 22 of the Financial Services and Markets Act 2000 and is not registered with the Financial Services Authority of the UK.

GLOBAL SMART GRID DRIVERS

COLIN MCKERRACHER –
CMCKERRACHER@BLOOMBERG.NET

MARKETS

Renewable Energy

Carbon Markets

Energy Smart Technologies

Renewable Energy Certificates

Carbon Capture & Storage

Power

Water

Nuclear

SERVICES

Insight: research, analysis & forecasting

Industry Intelligence: data & analytics

News & Briefing: daily, weekly & monthly

Applied Research: custom research & data mining

Knowledge Services: Summit, Leadership Forums, Executive Briefings & workshops

Subscription-based news, data
and analysis to support your
decisions in clean energy, power
and water and the carbon markets

info@bnef.com

Bloomberg
NEW ENERGY FINANCE