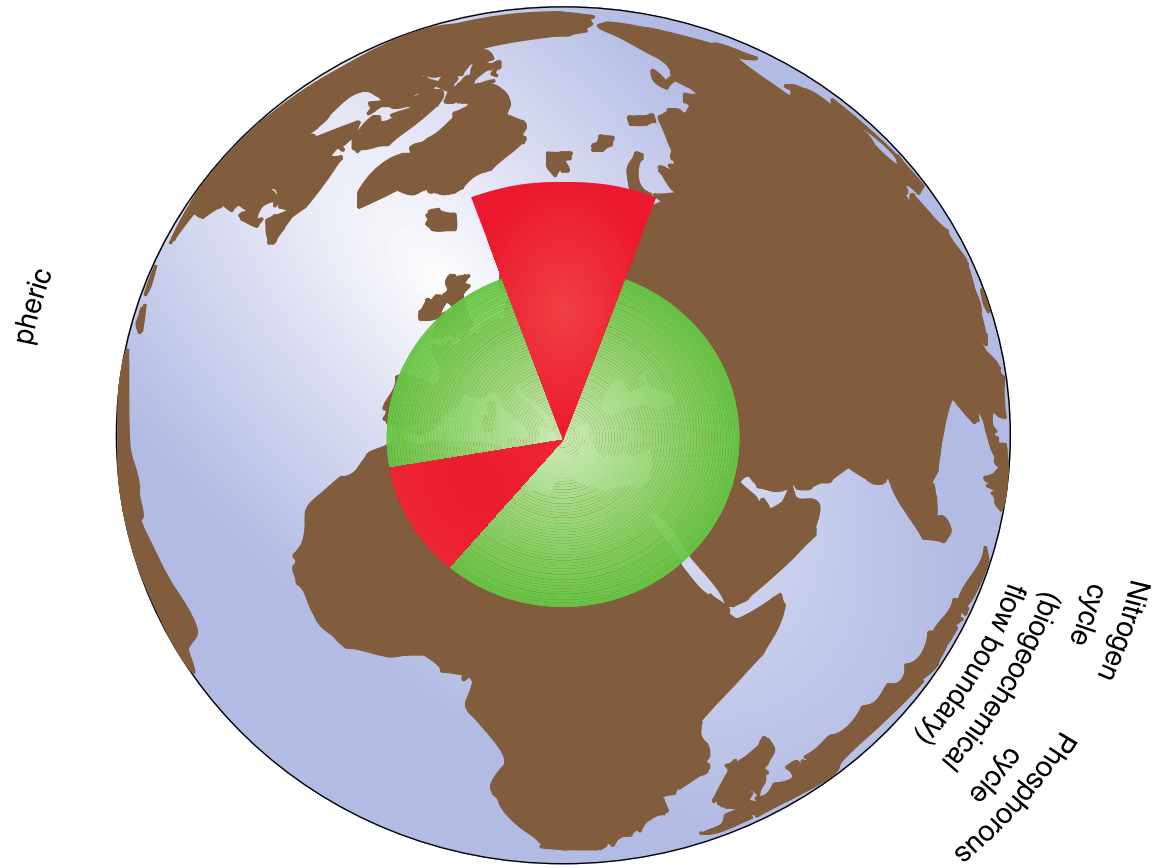


# Sustainable Development as the New Driver of Global Growth

# “PLANETARY BOUNDARIES”

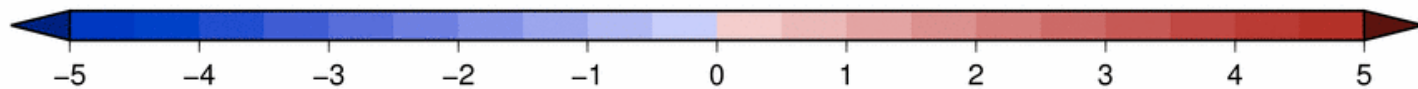
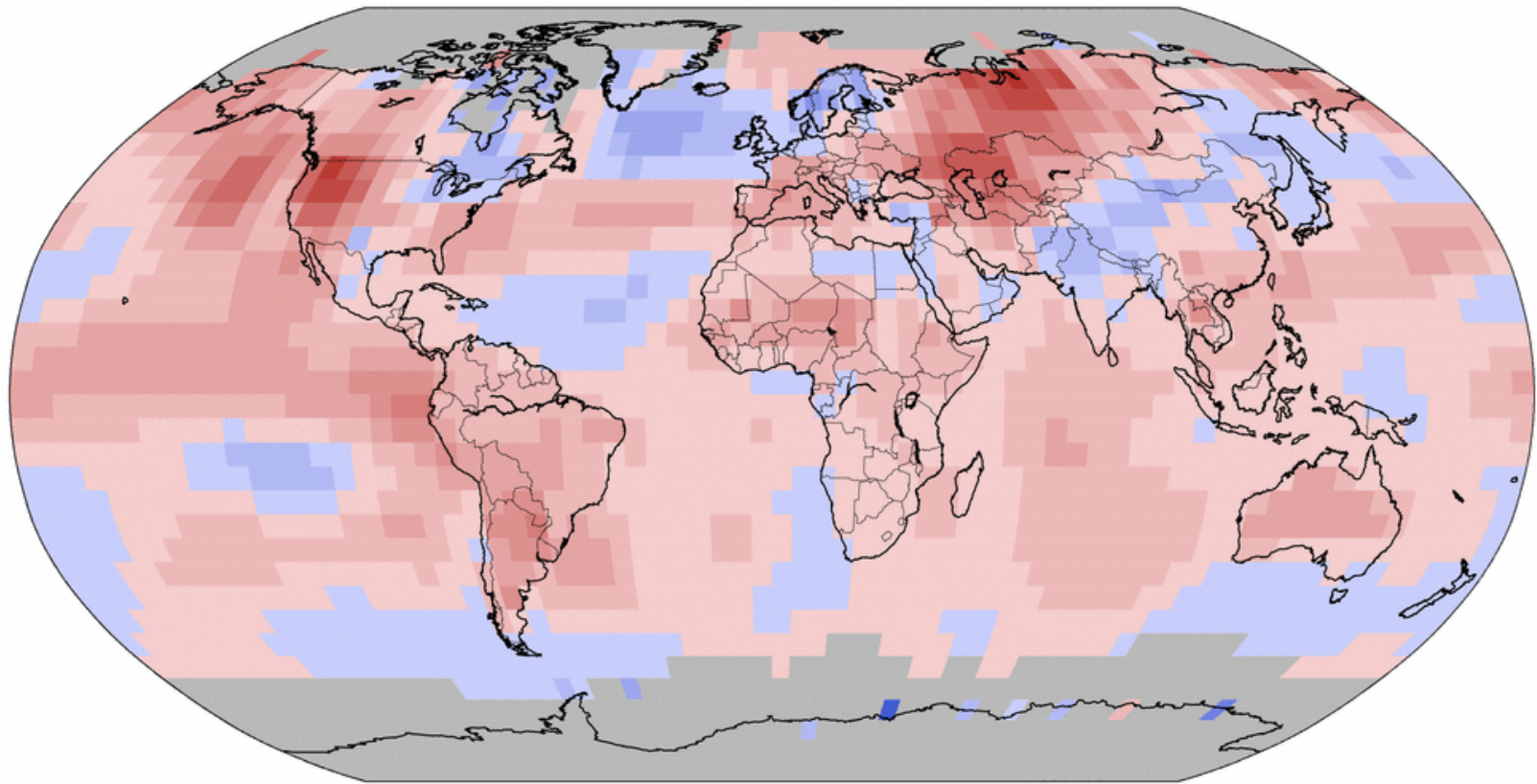


Source: Rockström et al 2009a)

# JUNE 2015 WARMEST IN 136-YEAR RECORD

Land & Ocean Temperature Departure from Average Jun 2015  
(with respect to a 1981–2010 base period)

Data Source: GHCN-M version 3.3.0 & ERSST version 4.0.0



National Centers for Environmental Information  
Mon Jul 13 06:35:21 EDT 2015

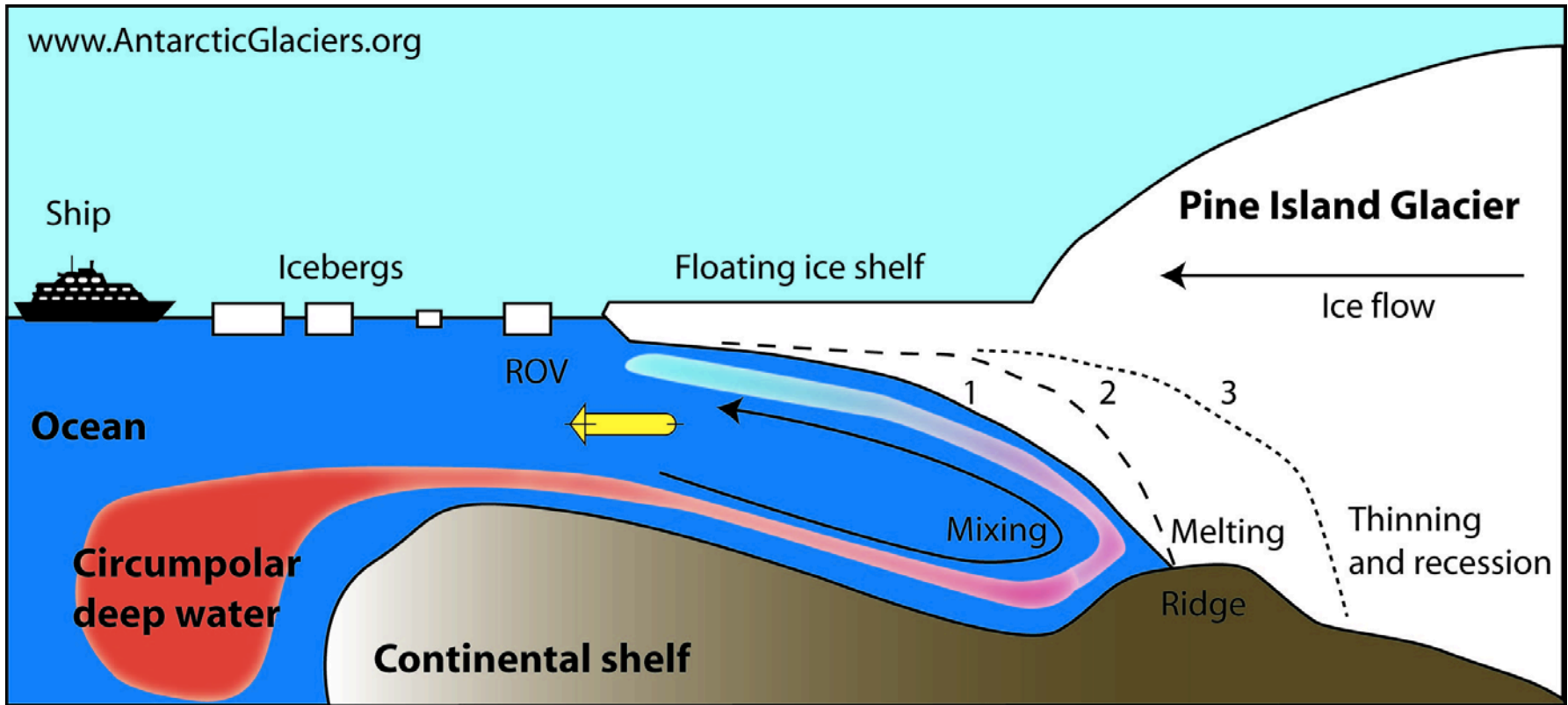
Degrees Celsius

Please Note: Gray areas represent missing data  
Map Projection: Robinson

# LOS ANGELES WATER RESERVOIR, APRIL 5, 2015

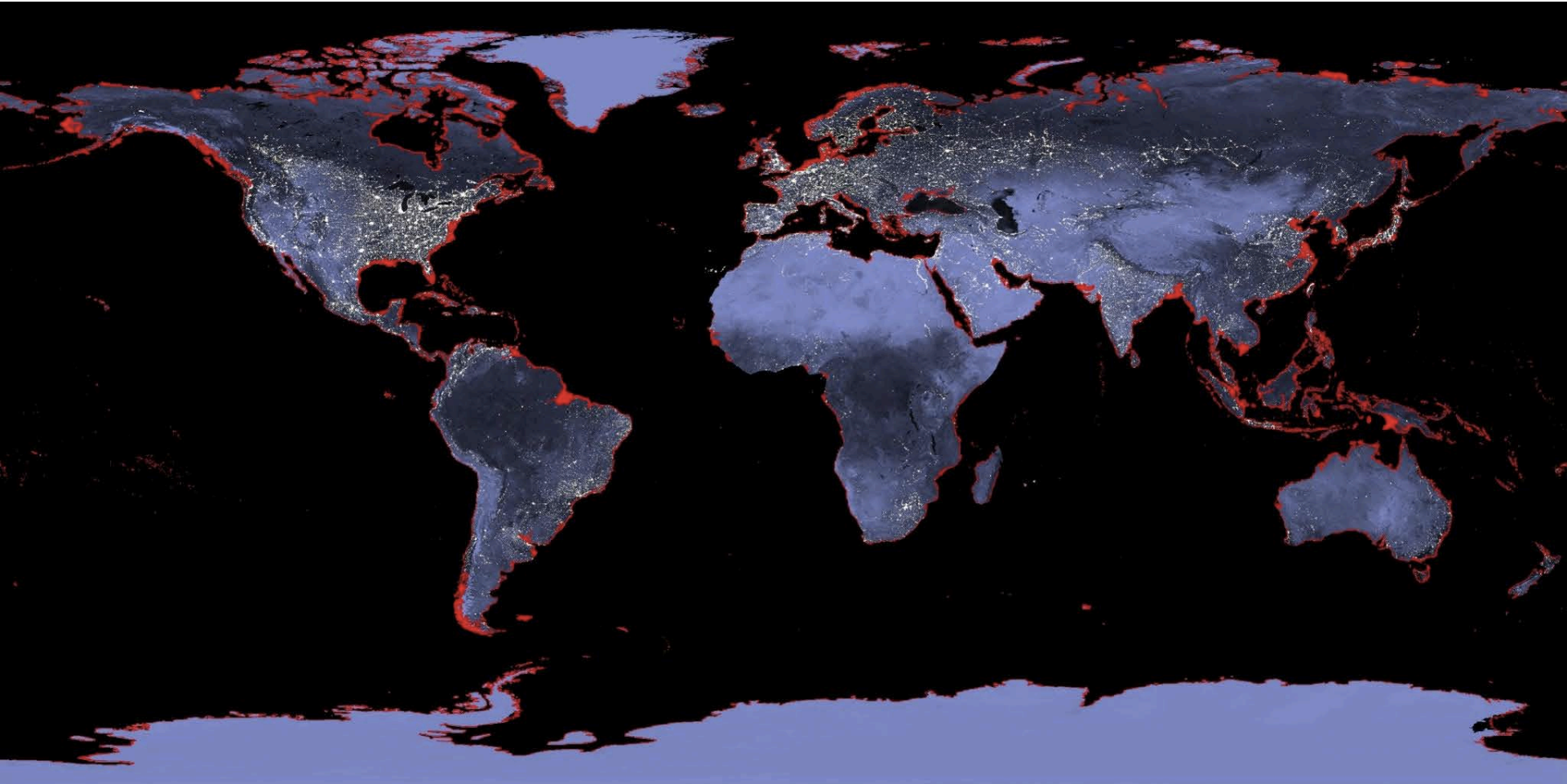


# LOSS OF WEST ANTARCTICA ICE SHEET



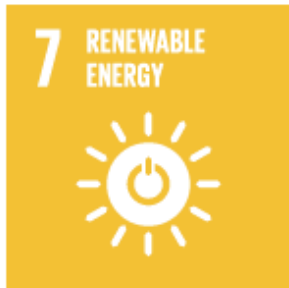
1. Early 1970s. Pine Island Glacier is grounded at a bedrock ridge.
2. Warm, inflowing Circumpolar Deep Water melts the base of the glacier. The glacier steepens and accelerates.
3. Present day, observed by a remotely operated vehicle (ROV). Glacier is thinning and receding.

# Land Lost to 6M Sea Level Rise, NASA

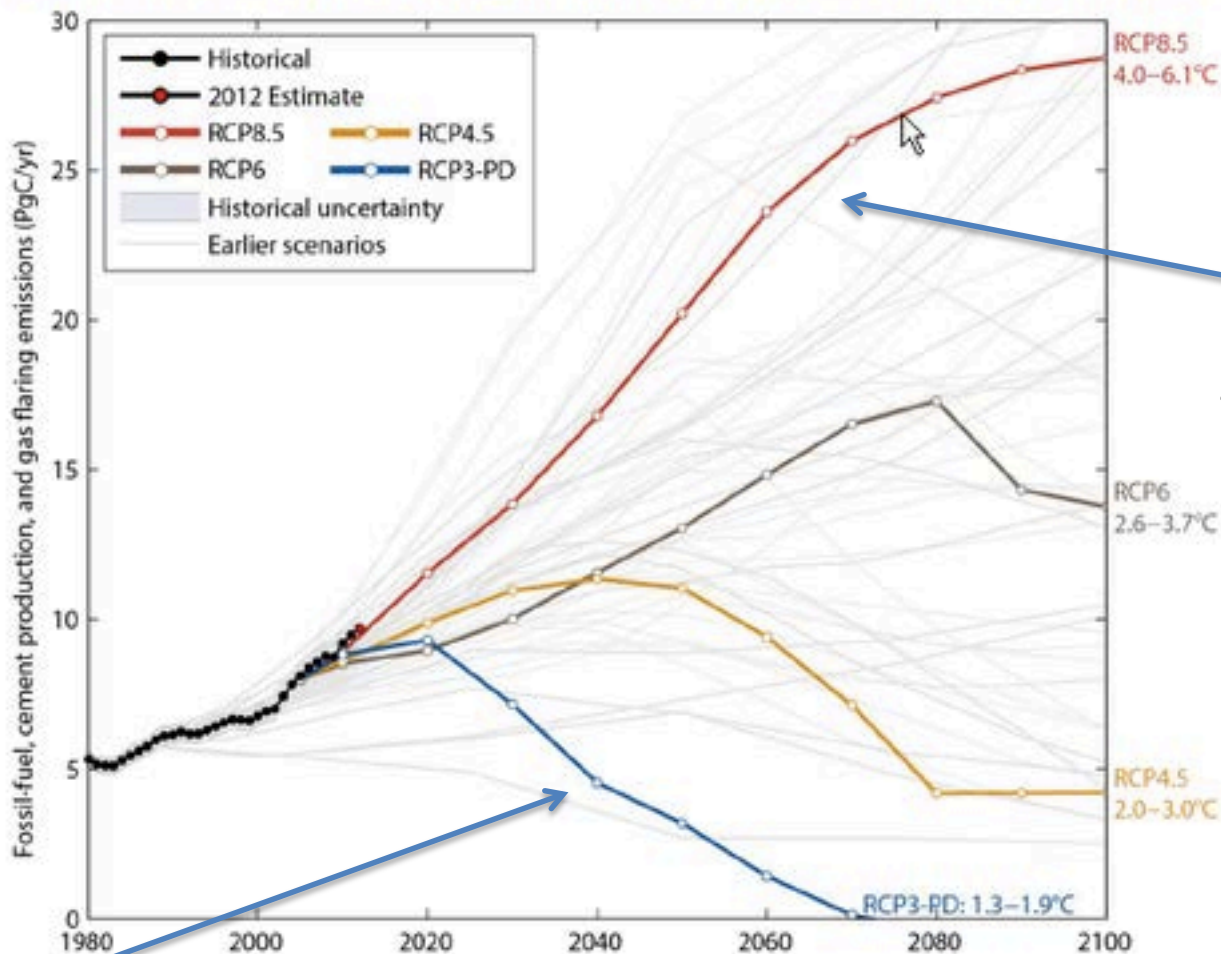




# THE SUSTAINABLE DEVELOPMENT GOALS WILL BE ADOPTED ON SEPTEMBER 25



Emissions are heading to a 4.0-6.1°C “likely” increase in temperature  
Large and sustained mitigation is required to keep below 2°C



BAU:  
4-6 degree C

Linear interpolation is used between individual datapoints

2-degree C

Source: [Peters et al. 2012a](#); [Global Carbon Project 2012](#);



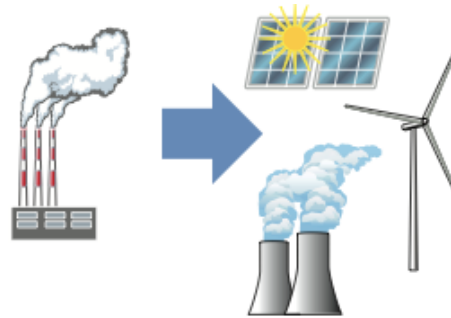
# Main Decarbonization Strategies

Strategy

Energy Efficiency



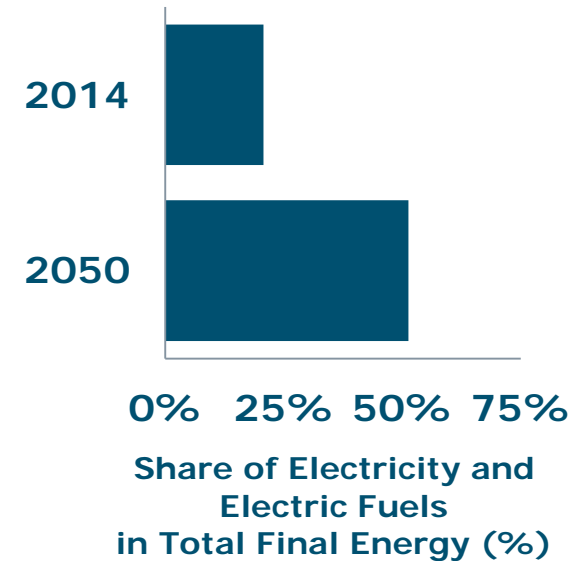
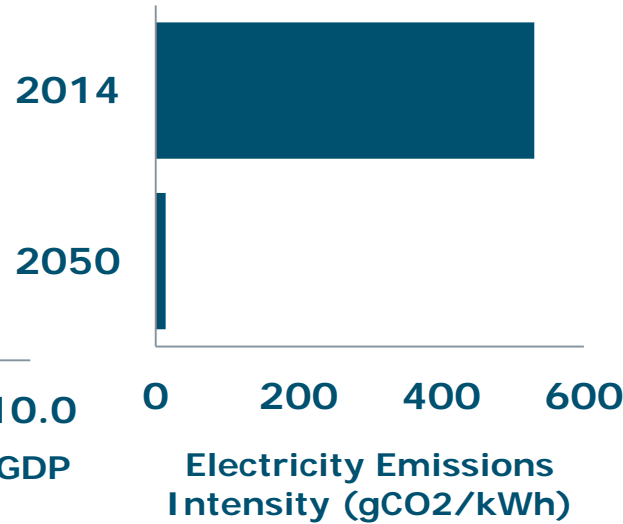
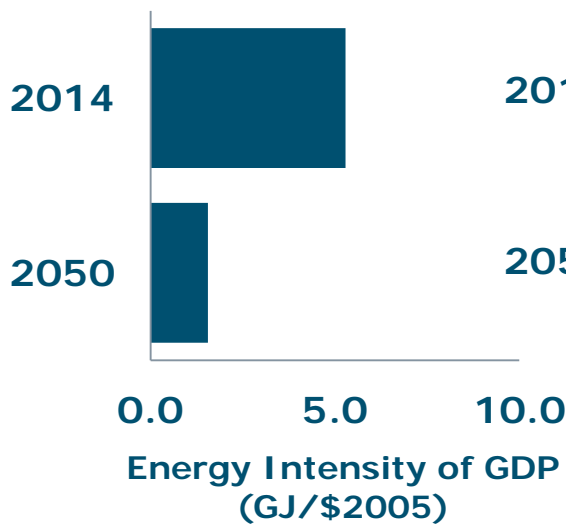
Decarbonization of Electricity



End Use Fuel Switching to Electric Sources



Key Metric of Transformation



# LARGE-SCALE LOW-CARBON ENERGY POTENTIAL IN:

WIND (ESPECIALLY OFFSHORE)

GEOHERMAL

PV SOLAR

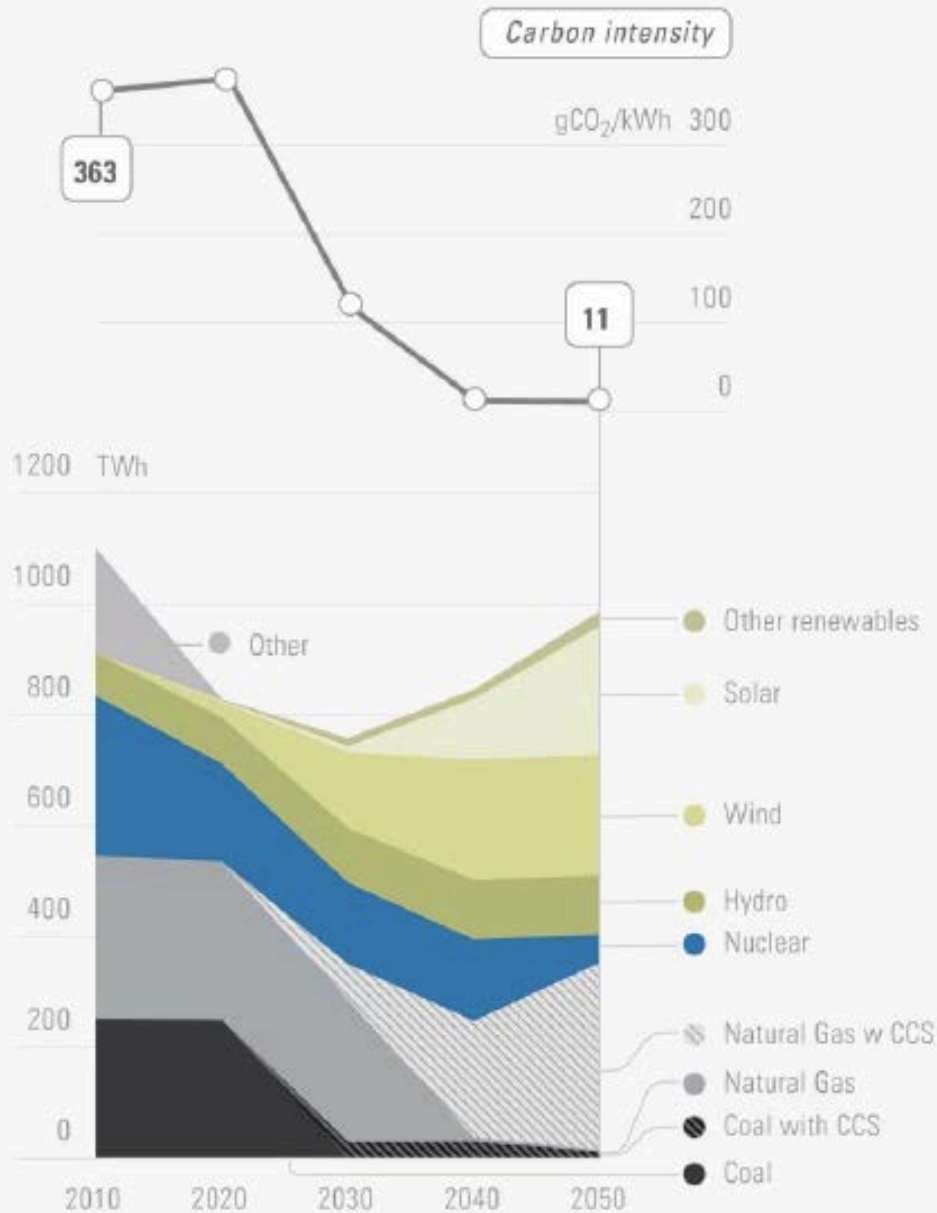
NUCLEAR (E.G. INTEGRAL FAST REACTOR  
AND OTHER ADVANCED TECHNOLOGIES)

ZERO-EMISSION VEHICLES (EVs/FCVs)

CARBON CAPTURE AND STORAGE

Figure 6. Energy Supply Pathways, by Resource

Electricity



AN ILLUSTRATIVE  
DEEP  
DECARBONIZATION  
PATHWAY FOR  
JAPAN BASED ON  
SOLAR, WIND, AND  
CCS

# THE WORLD WILL NEED TO STRAND OIL, GAS, AND COAL RESERVES

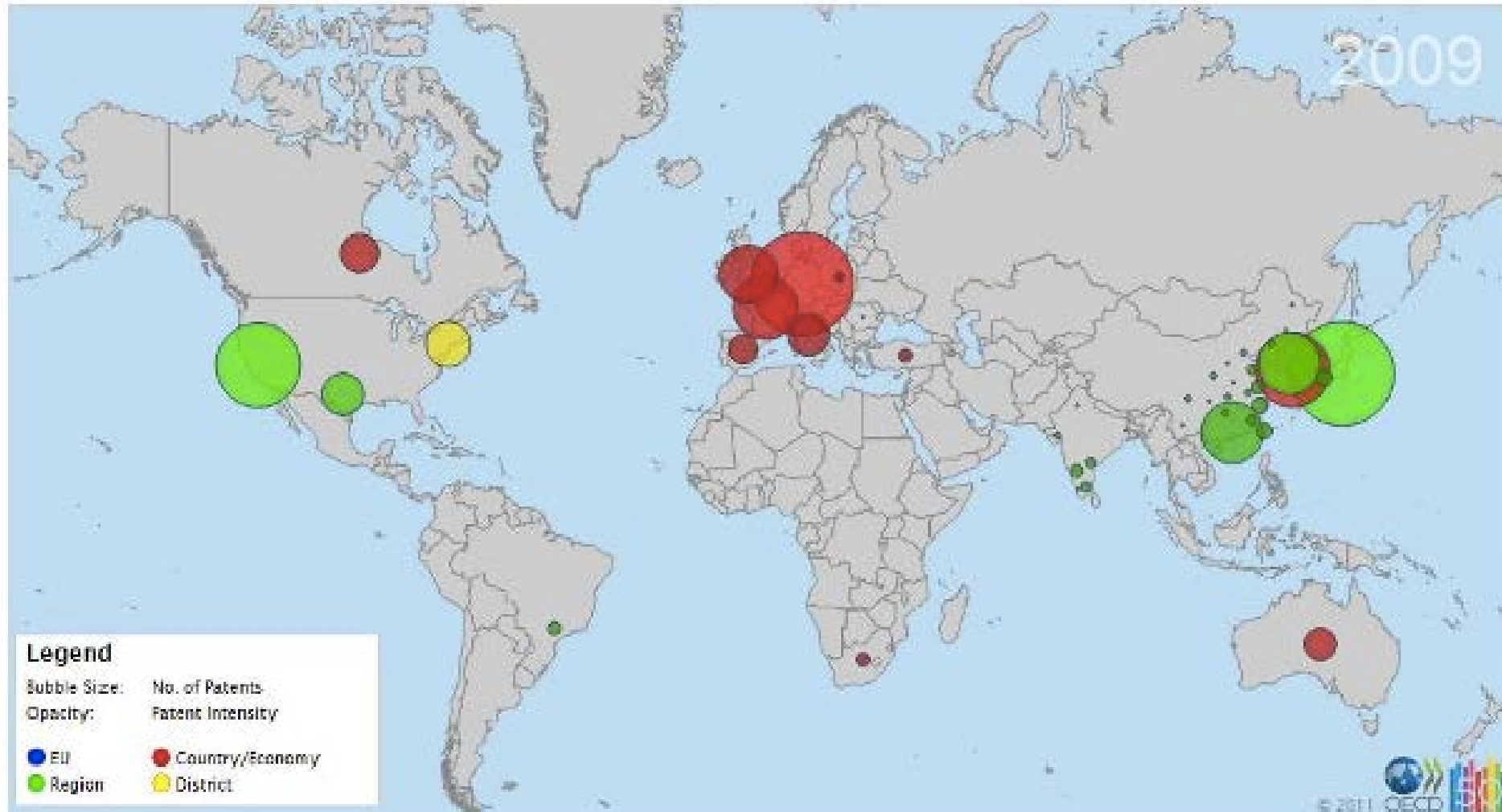
**Table 1 | Regional distribution of reserves unburnable before 2050 for the 2 °C**

Country or region	2 °C with CCS					
	Oil		Gas		Coal	
	Billions of barrels	%	Trillions of cubic metres	%	Gt	%
Africa	23	21%	4.4	33%	28	85%
Canada	39	74%	0.3	24%	5.0	75%
China and India	9	25%	2.9	63%	180	66%
FSU	27	18%	31	50%	203	94%
CSA	58	39%	4.8	53%	8	51%
Europe	5.0	20%	0.6	11%	65	78%
Middle East	263	38%	46	61%	3.4	99%
OECD Pacific	2.1	37%	2.2	56%	83	93%
ODA	2.0	9%	2.2	24%	10	34%
United States of America	2.8	6%	0.3	4%	235	92%
Global	431	33%	95	49%	819	82%

FROM McGLADE AND EKINS, NATURE MAGAZINE, JANUARY 8, 2015

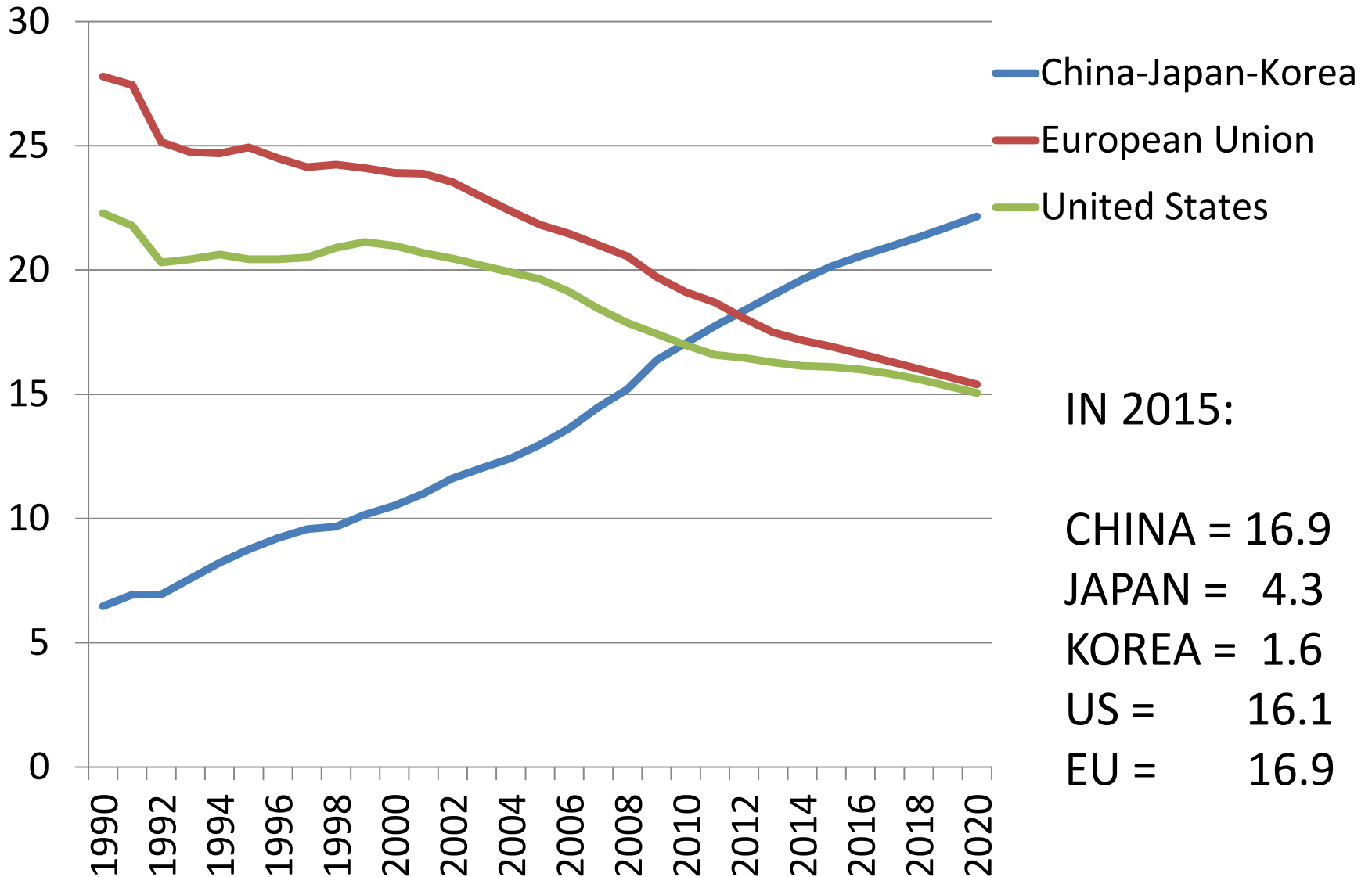
# A Sustainable Development Growth Strategy for Japan

# STEP 1. CLOSER INTEGRATION WITH CHINA AND KOREA: FDI, JOINT RESEARCH, JOINT PRODUCTION





# SHIFTING GEO-ECONOMICS: SHARES OF WORLD GDP



## STEP 2. FOCUS ON KEY SUSTAINABLE DEVELOPMENT CHALLENGES

JAPANESE LEADERSHIP IN:

DEEP DECARBONIZATION PATHWAY (DDPP)  
ENERGY EFFICIENCY AND LOW-CARBON  
ENERGY

ROBOTICS AND INFORMATION TECHNOLOGY  
URBAN DESIGN (SDSN SDG URBAN  
ALLIANCE)

NANOTECHNOLOGY AND BIOTECHNOLOGY  
(GREEN CHEMISTRY)

CHALLENGES OF AGING AND WELLBEING

# FOSTER A SUSTAINABLE DEVELOPMENT VENTURE CAPITAL INDUSTRY, BUILDING ON:

- (1) TOP UNIVERSITIES AND THINK TANKS
- (2) INCREASED FOREIGN INVESTMENTS, BOTH  
INWARD AND OUTWARD
- (3) REGIONAL PRODUCTION STRUCTURES
- (4) NATIONAL RENEWABLE ENERGY AND  
SMART CITIES
- (5) NEW GLOBAL MARKETS (AFRICA, ASIA)