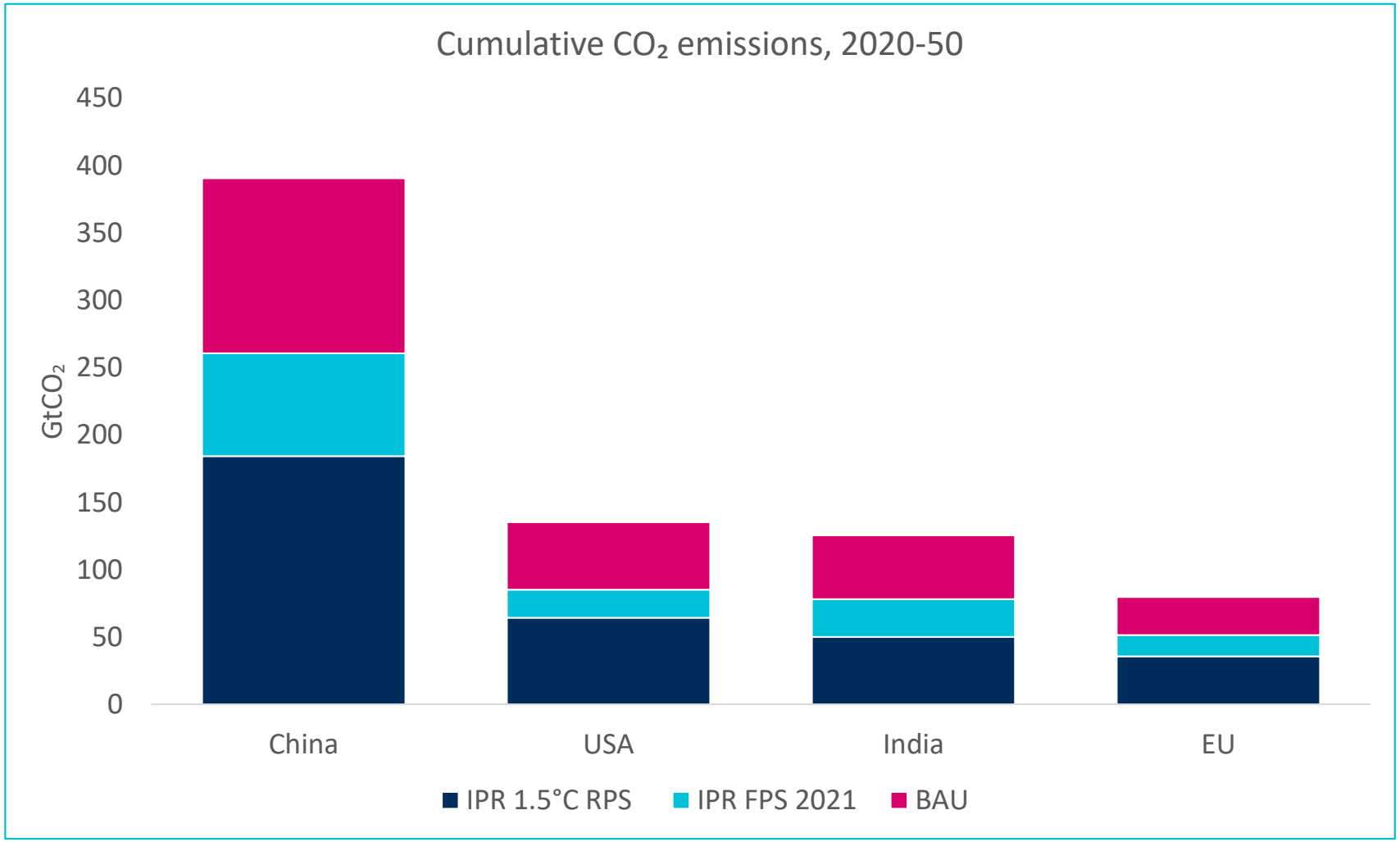
Inevitable Policy Response Quarterly Forecast Trackers

Current IPR Policy Scenario Forecasts
As at October 2021 FPS Update

Embedded in the IPR FPS 2021 are substantial emissions reductions, additional reductions to achieve the IPR 1.5°C RPS will be challenging



- The IPR FPS 2021 represents a substantial reduction in emissions relative to a business-as-usual (BAU) scenario
- China's emissions are around 35% lower than under a BAU pathway
- The United States and India's emissions are around 40% lower
- The EU's emissions are around 35% lower
- Smaller additional reductions are needed to achieve the IPR 1.5°C RPS, though these will be more costly and challenging than those delivered under the IPR FPS 2021

Policies with the greatest 2020-2050 Gt reduction between IPR 1.5°C RPS and IPR FPS 2021

Rank	Policy	Country	IPR 1.5°C RPS vs IPR FPS 2021 Gt reduction
1	Coal phase out	China	40.0
2	End deforestation and NBS	Sub-Saharan Africa, South East Asia and Latin America	19.0
3	100% clean industry	China	19.0
4	Coal phase out	India	14.1
5	100% clean industry	India	8.3
6	100% clean industry	MENA	7.2
7	100% clean power	MENA	6.7
8	Fossil vehicle phase out	China	6.3
9	Coal phase out	Indonesia	5.4
10	100% clean industry	South East Asia	5.2

Reduction is also substantial for OECD countries e.g. for the United States accelerated 1.5°C RPS policies deliver:

- **20 $GtCO_2$ reduction beyond FPS across all policies**
- **4.9 $GtCO_2$ reduction beyond FPS for 100% clean industry policy**

Reduction is also substantial for methane and nitrous oxide emissions that result from accelerated 1.5°C RPS policies related to animal protein demand:

- **24 $GtCO_2eq$ reduction beyond FPS across all countries**
- **4.3 $GtCO_2eq$ reduction beyond FPS in India alone**

Instructions: how to read the following tables containing IPR policy forecasts

The following section provides an overview of the FPS and RPS forecasts for each country or region.

IPR 1.8°C Forecast Policy Scenario (FPS)

- Models impact of forecasted policies on the real economy.

IPR 1.5°C Required Policy Scenario (RPS)

- Required policies to align to a **1.5°C objective**

How to read the tables

Each table presents the **estimated time by which the forecast will be achieved for different countries or regions** around the world.

In the sample table below for Australia (AU), under the FPS coal will be phased out by 2040, whereas the RPS requires coal to be phased out by 2030.

Phase out of existing unabated coal

	Timeline									annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia			RPS		FPS					10%	5%
Brazil				RPS		FPS				7%	4%
Canada		RPS	FPS							20%	10%
China				RPS		FPS				7%	4%
Central and South America				RPS		FPS				7%	4%
Eastern Europe			RPS		FPS					10%	5%
Eurasia						RPS			FPS	4%	3%

The final two columns show the annual reduction in coal necessary to achieve these targets.

To meet a global coal phase out of 2045, immediate policy action is required

Phase out of existing unabated coal

	Timeline								annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia			RPS		FPS					10%	5%
Brazil				RPS		FPS				7%	4%
Canada		RPS	FPS							20%	10%
China				RPS		FPS				7%	4%
Central and South America				RPS		FPS				7%	4%
Eastern Europe			RPS		FPS					10%	5%
Eurasia						RPS			FPS	4%	3%
Gulf States						RPS			FPS	4%	3%
India						RPS			FPS	4%	3%
Indonesia						RPS			FPS	4%	3%
Japan				RPS		FPS				7%	4%
Middle East and North Africa						RPS			FPS	4%	3%
Russia						RPS			FPS	4%	3%
Saudi Arabia						RPS			FPS	4%	3%
South Africa				RPS	FPS					7%	5%
SEAO						RPS			FPS	4%	3%
South Korea				RPS		FPS				7%	4%
Sub Saharan Africa						RPS			FPS	4%	3%
United Kingdom		Both								20%	20%
United States of America			RPS	FPS						10%	7%
Western Europe			RPS		FPS					10%	5%

** reduction in coal generation as a share of 2020 levels*

To meet 100% clean power by 2050, immediate policy action is required

100% clean power

	Timeline									annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia					RPS		FPS			5%	3%
Brazil					RPS		FPS			5%	3%
Canada			RPS	FPS						10%	7%
China					RPS		FPS			5%	3%
Central and South America					RPS		FPS			5%	3%
Eastern Europe				RPS		FPS				7%	4%
Eurasia						RPS			FPS	4%	3%
Gulf States						RPS			FPS	4%	3%
India						RPS			FPS	4%	3%
Indonesia						RPS			FPS	4%	3%
Japan				RPS		FPS				7%	4%
Middle East and North Africa						RPS			FPS	4%	3%
Russia						RPS			FPS	4%	3%
Saudi Arabia						RPS			FPS	4%	3%
South Africa				RPS	FPS					7%	5%
SEAO						RPS			FPS	4%	3%
South Korea				RPS		FPS				7%	4%
Sub Saharan Africa						RPS			FPS	4%	3%
United Kingdom				RPS	FPS					7%	5%
United States of America				RPS	FPS					7%	5%
Western Europe				RPS		FPS				7%	4%

** reduction in power CO2 emissions as a share of 2020 levels*

Light duty vehicles: new fossil vehicles must be phased out between 2030 and 2045 under RPS, five years earlier than under IPR FPS 2021 policies

Fossil vehicle phase out (light duty)

	Timeline									annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia				RPS	FPS					7%	5%
Brazil					RPS	FPS				5%	4%
Canada			RPS	FPS						10%	7%
China			RPS	FPS						10%	7%
Central and South America				RPS	FPS					7%	5%
Eastern Europe			RPS	FPS						10%	7%
Eurasia					RPS	FPS				5%	4%
Gulf States					RPS	FPS				5%	4%
India				RPS	FPS					7%	5%
Indonesia				RPS	FPS					7%	5%
Japan				RPS	FPS					7%	5%
Middle East and North Africa				RPS	FPS					7%	5%
Russia					RPS	FPS				5%	4%
Saudi Arabia						RPS	FPS			4%	3%
South Africa				RPS	FPS					7%	5%
SEAO				RPS	FPS					7%	5%
South Korea			RPS	FPS						10%	7%
Sub Saharan Africa						RPS	FPS			4%	3%
United Kingdom			Both							10%	10%
United States of America				RPS	FPS					7%	5%
Western Europe			RPS	FPS						10%	7%

** reduction in fossil vehicle sales as a share of 2020 levels*

Heavy duty vehicles: new fossil vehicles must be phased out between 2035 and 2050 under RPS, five years earlier than under IPR FPS 2021 policies

Fossil vehicle phase out (heavy duty)

	Timeline									annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia					RPS	FPS				5%	4%
Brazil					RPS	FPS				5%	4%
Canada					RPS	FPS				5%	4%
China				RPS	FPS					7%	5%
Central and South America					RPS	FPS				5%	4%
Eastern Europe				RPS	FPS					7%	5%
Eurasia						RPS	FPS			4%	3%
Gulf States						RPS	FPS			4%	3%
India					RPS	FPS				5%	4%
Indonesia					RPS	FPS				5%	4%
Japan				RPS	FPS					7%	5%
Middle East and North Africa					RPS	FPS				5%	4%
Russia						RPS	FPS			4%	3%
Saudi Arabia							RPS	FPS		3%	3%
South Africa					RPS	FPS				5%	4%
SEAO					RPS	FPS				5%	4%
South Korea				RPS	FPS					7%	5%
Sub Saharan Africa							RPS	FPS		3%	3%
United Kingdom				Both						7%	7%
United States of America					RPS	FPS				5%	4%
Western Europe				RPS	FPS					7%	5%

** reduction in fossil vehicle sales as a share of 2020 levels*

Industry: the sector has a 30-year transition opportunity to net zero

100% clean industry

	Timeline								annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	>2060	RPS	FPS
Australia							RPS		FPS	3%	2%
Brazil								RPS	FPS	3%	2%
Canada							RPS		FPS	3%	2%
China								RPS	FPS	3%	2%
Central and South America								RPS	FPS	3%	2%
Eastern Europe							RPS		FPS	3%	2%
Eurasia								RPS	FPS	3%	2%
Gulf States								RPS	FPS	3%	2%
India								RPS	FPS	3%	2%
Indonesia								RPS	FPS	3%	2%
Japan							RPS		FPS	3%	2%
Middle East and North Africa								RPS	FPS	3%	2%
Russia								RPS	FPS	3%	2%
Saudi Arabia								RPS	FPS	3%	2%
South Africa							RPS		FPS	3%	2%
SEAO								RPS	FPS	3%	2%
South Korea							RPS		FPS	3%	2%
Sub Saharan Africa								RPS	FPS	3%	2%
United Kingdom							RPS		FPS	3%	2%
United States of America							RPS		FPS	3%	2%
Western Europe							RPS		FPS	3%	2%

** reduction in industry CO2 emissions as a share of 2020 levels*

Buildings: new fossil heating systems must be phased out globally by 2040 under RPS, and by 2030 in regions with large heating needs

New fossil heating system phase out

	Timeline									annual reduction*	
	2020	2025	2030	2035	2040	2045	2050	2055	2060	RPS	FPS
Australia			RPS	FPS						10%	7%
Brazil					RPS		FPS			5%	3%
Canada			RPS	FPS						10%	7%
China					RPS	FPS				5%	4%
Central and South America				RPS	FPS					7%	5%
Eastern Europe			RPS	FPS						10%	7%
Eurasia					RPS		FPS			5%	3%
Gulf States					RPS		FPS			5%	3%
India					RPS		FPS			5%	3%
Indonesia					RPS		FPS			5%	3%
Japan				RPS	FPS					7%	5%
Middle East and North Africa					RPS		FPS			5%	3%
Russia					RPS		FPS			5%	3%
Saudi Arabia					RPS		FPS			5%	3%
South Africa			RPS	FPS						10%	7%
SEAO					RPS		FPS			5%	3%
South Korea				RPS	FPS					7%	5%
Sub Saharan Africa					RPS		FPS			5%	3%
United Kingdom			RPS	FPS						10%	7%
United States of America				RPS	FPS					7%	5%
Western Europe			RPS	FPS						10%	7%

** reduction in fossil heating system sales as a share of 2020 levels*

Achieving 1.5°C RPS animal meat consumption reductions requires a shift in policy acceleration of five years compared to the IPR FPS 2021

	2020	2025	2030	2035	2040	Reduction in per capita meat consumption* 2020-2050 (%) IPR FPS 2021	IPR 1.5C RPS
Australia		RPS	FPS			42	51
Brazil		RPS	FPS			38	48
Canada		RPS	FPS			43	52
China				FPSRPS		35	45
Central and South America		RPS	FPS			34	45
Eastern Europe		RPS	FPS			40	50
Eurasia			RPS	FPS		30	42
Gulf States			RPS	FPS		25	37
India			RPS	FPS		0	14
Indonesia			RPS	FPS		18	31
Japan		RPS	FPS			40	50
Middle East and North Africa			RPS	FPS		28	39
Russia		RPS	FPS			36	46
Saudi Arabia			RPS	FPS		6	22
South Africa			RPS	FPS		-13	6
SEAO			RPS	FPS		20	33
South Korea		RPS	FPS			40	50
Sub Saharan Africa					FPSRPS	-13	6
United Kingdom		RPS	FPS			41	50
United States of America		RPS	FPS			42	51
Western Europe	RPS	FPS				40	50

*kcal per person

Large drop in SSA happens post 2035

Ending deforestation by 2025 in 1.5°C RPS and 2030 in IPR FPS 2021 will require immediate policy action

Deforestation of natural forest halted through command and control policy

	End of deforestation			Change in forest cover 2020-2050 (m ha)	
	2020	2025	2030	IPR FPS 2021	IPR 1.5C RPS
Australia		FPSRPS		3	3
Brazil		RPS	FPS	12	16
Canada	FPSRPS			1	1
China		RPS	FPS	92	92
Central and South America		RPS	FPS	10	14
Eastern Europe		FPSRPS		4	4
Eurasia		RPS	FPS	1	2
Gulf States	FPSRPS			0	0
India		RPS	FPS	13	13
Indonesia		RPS	FPS	2	6
Japan	FPSRPS			0	0
Middle East and North Africa		RPS	FPS	-1	1
Russia		RPS	FPS	1	2
Saudi Arabia	FPSRPS			0	0
South Africa		RPS	FPS	0	1
SEAO		RPS	FPS	3	11
South Korea	FPSRPS			0	0
Sub Saharan Africa		RPS	FPS	0	15
United Kingdom	FPSRPS			1	1
United States of America		FPSRPS		17	17
Western Europe		RPS	FPS	11	12

Under IPR scenarios, carbon pricing and NDC commitments could combine to stop net deforestation by 2030

Countries/region like CAN, GCC, Japan, SA, SK, UK have virtually zero net deforestation

INEVITABLE POLICY RESPONSE

Some countries achieve net zero CO_2 emissions on a territorial basis, while others require international carbon offsets to meet commitments

Contribution from each sector to total % change in CO2 emissions, 2020-50 and net zero year (territorial basis)

Group	Region	Power	Transport	Buildings	Industry	Land	Total	Net zero year
OECD	United States	-39%	-31%	-10%	-10%	-7%	**-100%**	2050
	EU	-30%	-27%	-14%	-14%	-10%	**-100%**	2050
	UK	-36%	-21%	-11%	-13%	-12%	**-100%**	2050
	Japan	-38%	-18%	-9%	-18%	-2%	**-89%**	not achieved
	Korea	-40%	-18%	-7%	-17%	-1%	**-87%**	not achieved
	Canada	-10%	-22%	-11%	-10%	-26%	**-89%**	2069
	Australia	-38%	-21%	-3%	-9%	-20%	**-94%**	2058
Non-OECD	China	-41%	-7%	-3%	-24%	-11%	**-91%**	2059
	India	-34%	-7%	-1%	-7%	-14%	**-66%**	2061
	Brazil	-3%	-10%	-1%	-5%	-81%	**-101%**	2050
	Russia	-24%	-10%	-5%	-9%	-7%	**-64%**	2087
	Indonesia	-19%	-14%	-2%	12%	-33%	**-57%**	2081
	South Africa	-42%	-11%	-5%	-9%	-8%	**-90%**	not achieved
	South East Asia	-21%	-15%	-1%	2%	-22%	**-60%**	not achieved
	MENA	-20%	-22%	-6%	8%	-4%	**-47%**	not achieved
	Central and South America	-16%	-19%	-4%	1%	-43%	**-83%**	2078
	Eurasia	-30%	-10%	-8%	-1%	-13%	**-69%**	2068
	Gulf States (GCC)	-26%	-21%	0%	1%	0%	**-50%**	not achieved
	South Asia	-18%	-4%	-3%	14%	-20%	**-29%**	2078
	Sub-saharan Africa	-3%	-3%	0%	8%	-59%	**-58%**	not achieved