Next few days tasks:

- Emission trajectories for a certain scenario is a must as of now
- First step isn't necessarily the physical risk but the trajectories to find (sectors/regions/countries)
- Data on for e.g.: What are the implicit trajectories for a certain scenario (NZ 2050 ex) for a certain region/country
- For each scenario we want the trajectories per sectors and regions
- IEA and NGFS look like the most promising one, what's really available? Check Eric's email regarding IEA, do my own research for NGFS. Free or not (price?) granularity of regions/sectors.
- Dive deeper on what BNEF has.
- Find data such as « Pour le NGFS en BAU, trajectoire attendue pour le secteur d'énergie » same for IEA
- Once I have trajectories, do they have intermediaries' point? 2030-2050, do they continue up to 2100?
- If not data on sectors, what else as substitute?
- Moody's for physical risk, what do they have?
- Eric's email : https://www.iea.org/data-and-statistics/data-product/world-energy-outlook-2024-extended-dataset

Results:

IEA:

File: WEO2024_Free_Dataset

The regions present in the file are: EU, US, Japan, Russia, China, India, Middle East, Africa, Brazil. It doesn't contain any data per country in the free dataset. The website says it contains them in the extended data set which is for sale. The price seems quite cheap 660 euros for one user, digital availability.

They have trajectories under their 3 scenarios for each sectors not by regions but world. This is only available for few trajectories such as World Energy Supply | World TFC | World Electricity | World CO2 Emissions | World Indicators.

Intermediaries date: 2030 – 2035 - 2040

	Stated Policies							CAAGR (%) 2023 to:	
	2010	2022	2023	2030	2035	2040	2050	2030	2050
Indicators									
Population (million)	6 966	7 948	8 018	8 518	8 851	9 160	9 680	0.9	0.7
GDP (USD 2023 billion, PPP)	118 823	170 644	175 981	217 526	250 591	284 660	357 510	3.1	2.7
GDP per capita (USD 2023, PPP)	17 057	21 471	21 948	25 537	28 312	31 078	36 931	2.2	1.9
TES/GDP (GJ per USD 1 000, PPP)	4.5	3.7	3.7	3.1	2.7	2.4	2.0	-2.3	-2.2
TFC/GDP (GJ per USD 1 000, PPP)	3.0	2.4	2.4	2.1	1.9	1.7	1.5	-1.7	-1.8
CO_2 intensity of electricity generation (g CO_2 per kWh)	528	460	458	312	219	164	111	-5.4	-5.1
Industrial production (Mt)									
Primary chemicals	510	721	736	866	925	961	1 002	2.3	1.1
Steel	1 435	1 890	1 892	2 049	2 157	2 255	2 424	1.1	0.9
Cement	3 280	4 156	4 072	4 206	4 395	4 548	4 735	0.5	0.6
Aluminium	60	104	108	123	133	143	167	1.9	1.6
Transport									
Passenger cars (billion pkm)	16 889	24 181	25 381	31 073	36 015	41 115	49 671	2.9	2.5
Heavy-duty trucks (billion tkm)	24 022	32 017	32 792	41 787	48 408	54 686	67 520	3.5	2.7
Aviation (billion pkm)	4 923	5 977	8 182	11 857	13 777	16 070	20 588	6.4	3.7
Shipping (billion tkm)	80 335	109 679	111 106	119 188	126 037	134 006	155 031	1.0	1.2
Buildings									
Households (million)	1 800	2 171	2 196	2 396	2 538	2 674	2 916	1.3	1.1
Residential floor area (million m^2)	154 190	200 926	204 412	230 630	250 933	271 510	311 590	1.7	1.6
Services floor area (million m^2)	39 439	54 920	56 342	64 233	69 562	74 529	83 188	1.9	1.5

	Announced Pledges					CAAGR (%) 2023 to:	
	2023	2030	2035	2040	2050	2030	2050
Indicators							
Population (million)	8 018	8 518	8 851	9 160	9 680	0.9	0.7
GDP (USD 2023 billion, PPP)	175 981	217 526	250 591	284 660	357 510	3.1	2.7
GDP per capita (USD 2023, PPP)	21 948	25 537	28 312	31 078	36 931	2.2	1.9
TES/GDP (GJ per USD 1 000, PPP)	3.7	3.0	2.5	2.2	1.8	-3.0	-2.6
TFC/GDP (GJ per USD 1 000, PPP)	2.4	2.0	1.7	1.5	1.2	-2.5	-2.6
CO_2 intensity of electricity generation (g CO_2 per kWh)	458	270	140	73	29	-7.3	-9.7
Industrial production (Mt)							
Primary chemicals	736	838	879	899	897	1.9	0.7
Steel	1 892	2 012	2 054	2 089	2 132	0.9	0.4
Cement	4 072	4 110	4 204	4 261	4 302	0.1	0.2
Aluminium	108	126	135	144	164	2.2	1.6
Transport							
Passenger cars (billion pkm)	25 381	30 786	35 554	40 794	50 200	2.8	2.6
Heavy-duty trucks (billion tkm)	32 792	41 371	47 853	54 156	66 847	3.4	2.7
Aviation (billion pkm)	8 182	11 734	13 553	15 822	20 396	6.3	3.7
Shipping (billion tkm)	111 106	114 613	117 931	122 224	135 603	0.4	0.7
Buildings							
Households (million)	2 196	2 396	2 538	2 674	2 916	1.3	1.1
Residential floor area (million m^2)	204 412	230 630	250 933	271 510	311 590	1.7	1.6
Services floor area (million m^2)	56 342	64 233	69 562	74 529	83 188	1.9	1.5

	Net Zero Emissions by 2050					CAAGR (%) 2023 to:	
	2023	2030	2035	2040	2050	2030	2050
Indicators							
Population (million)	8 018	8 518	8 851	9 160	9 680	0.9	0.7
GDP (USD 2023 billion, PPP)	175 981	217 526	250 591	284 660	357 510	3.1	2.7
GDP per capita (USD 2023, PPP)	21 948	25 537	28 312	31 078	36 931	2.2	1.9
TES/GDP (GJ per USD 1 000, PPP)	3.7	2.7	2.2	1.9	1.6	-4.2	-3.1
TFC/GDP (GJ per USD 1 000, PPP)	2.4	1.8	1.5	1.2	1.0	-3.9	-3.4
CO_2 intensity of electricity generation (g CO_2 per kWh)	458	195	50	3	-4	-12	-184
Industrial production (Mt)							
Primary chemicals	736	826	855	860	823	1.7	0.4
Steel	1 892	1 950	1 954	1 928	1 925	0.4	0.1
Cement	4 072	3 984	3 969	3 904	3 812	-0.3	-0.2
Aluminium	108	126	136	143	151	2.3	1.3
Transport							
Passenger cars (billion pkm)	25 381	28 634	31 485	36 204	45 487	1.7	2.2
Heavy-duty trucks (billion tkm)	32 792	41 241	47 686	53 764	65 387	3.3	2.6
Aviation (billion pkm)	8 182	10 867	11 499	12 915	16 433	5.1	2.9
Shipping (billion tkm)	111 106	107 747	106 338	106 743	118 663	-0.4	0.2
Buildings							
Households (million)	2 196	2 396	2 538	2 674	2 916	1.3	1.1
Residential floor area (million m^2)	204 412	230 630	250 933	271 510	311 590	1.7	1.6
Services floor area (million m^2)	56 342	64 233	69 562	74 529	83 188	1.9	1.5

Then, they have trajectories per regions (not country) for Stated Policies | Announced Pledges but not for NZE, intermediaries date: 2030 – 2035 – 2050.

They have trajectories projections for fossil-fuel production and demand by region, power sector overview by region, energy demand, gross electricity generation and electrical capacity, carbon-dioxide (CO_2) emissions from the energy sector and global average annual and cumulative energy investments by type.

So here we lack the NZE scenario trajectories mentioned in the email.

File: WEO_2024_PG_Assumptions_STEPSandNZE_Scenario

It has per regions same as before (EU, US, Japan, Russia, China, India, Middle East, Africa, Brazil) data projections on the stated policy vs NZE about Coal | Gas | Fossil fuels equipped with CCUS | Nuclear | Renewables | Learning rates. Intermediaries 'steps are only 2030-2050.

Comments:

"N.B.: Please note that the data behind the following figures is not available in the Extended Dataset: 1.8, 3.11, 4.11, 4.12 and 5.26"

- This wouldn't be a problem I think as some those figures are very niche and not relevant, for some we could do without or simply find data somewhere else.

NGFS

https://data.ene.iiasa.ac.at/ngfs/#/workspaces/0

File: Emissions_GCAM_NGFS_32_Regions

They have per country selection option, but it looks like I cannot display any data when combining scenario + trajectory variable + 221 countries. The maximum I got was over 32 regions. An interesting variable for us is CO2 emissions up to 2100.

ISS:

Regarding the call I had, they said:

"We are still checking if we can actually work with you outside the university context, however in the meanwhile I am able to answer some of your questions:

- The climate universe is of around 39k + companies
- Yes, we can categories them by sector
- Yes we send you a sample of the data"

BNEF

File: BloombergNEF_NEO_2025_public_dataset and New-Energy-Outlook-2025-Executive-summary-external-14-04-2025-1

They have a free public benchmark that has only global (world) as regions; they do projections year by year from 2000 to 2050. They have a bloomberg benchmark that you need to purchase, with 80 added indicators (such as emissions by regions) and 36 "geographies" so probably regions. the public dataset is limited primarily to industry final energy consumption by fuel. It does not include other macro sectors like buildings, power, or transport in the free release, it's very narrow. Sent an email to ask for a subscription price.

Moody's (Pictet):

File: product-brochure-climate-pathways-2-july-2024 and product-brochure-climate-pathways-1-april-2025-2

Here's what Moody's Climate Pathways database should include:

- Scenario libraries: NGFS scenarios -> for Net Zero 2050, Delayed Transition, Divergent Net Zero and Below-2 °C, each with year-by-year tables.
- Sectoral trajectories (energy mix, CO_2 emissions, final energy demand) for key sectors: power, industry (steel, cement, chemicals), transport (road, aviation, maritime) and buildings.
- Intermediate checkpoints (e.g. required % emissions reduction by 2030 / 2040) alongside the 2050 endpoints + possibility to tweak the scenarios etc
- Physical-risk overlays (heat, flood, drought indices) mapped to geographies or corporate portfolios.
- Asset-return impacts showing how equity and credit returns shift by sector under each scenario.

- Regional breakdowns at major-region scale (OECD, EM, etc.) with potential for geolocated sub-national risk scores.

The full dataset isn't publicly browsable, but Moody's product literature and PFaroe platform descriptions list these components. Perhaps our Pictet colleagues, who already have methodological access, could confirm that these items are indeed available in their package.

OLD

Goal / Task: