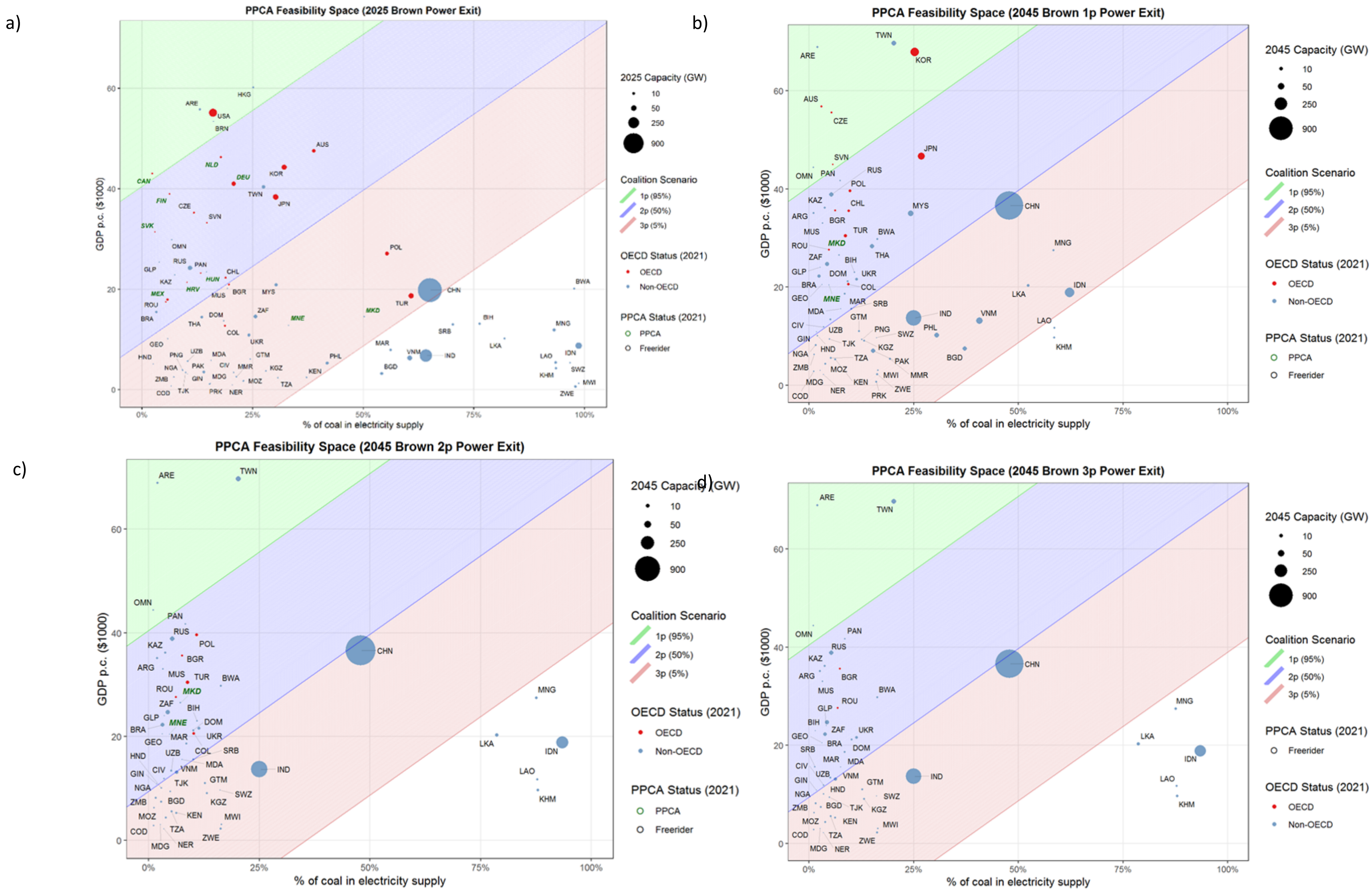
Country	*ISO Code*	*PPCA Status*	*OECD Status*	*Coal Share 2015*	*GDPpc 2015 ($1000)*	*Prob. 2015*	*Prob. 2025*	*Prob. 2045*
Afghanistan	AFG	-	Non-OECD	0.05	1.37	0.26	0.32	0.36
Angola	AGO	PPCA	Non-OECD	0	6.12	0.42	0.44	0.44
Albania	**ALB**	**PPCA**	**Non-OECD**	**0**	**8.33**	**0.47**	**0.53**	**0.66**
Argentina	ARG	-	Non-OECD	0.02	15.18	0.61	0.76	0.91
Australia	AUS	-	OECD	0.63	41.72	0.37	0.89	0.99
Austria	AUT	PPCA	OECD	0.08	39.42	0.91	0.97	0.99
Burundi	BDI	-	Non-OECD	0.1	0.42	0.19	0.31	0.35
Belgium	BEL	PPCA	OECD	0.06	36.14	0.9	0.95	0.99
Burkina Faso	BFA	-	Non-OECD	0.1	1.27	0.21	0.33	0.39
Bangladesh	BGD	-	Non-OECD	0.02	1.78	0.3	0.05	0.36
Bulgaria	BGR	-	OECD	0.46	13.73	0.1	0.54	0.9
Bosnia & Herzegovina	BIH	-	Non-OECD	0.64	8.89	0.02	0.01	0.71
Brazil	BRA	-	Non-OECD	0.05	11.81	0.49	0.61	0.75
Botswana	BWA	-	Non-OECD	0.96	14.95	0.01	0.01	0.8
Central African Republic	CAF	-	Non-OECD	0.1	0.8	0.2	0.31	0.35
Canada	CAN	PPCA	OECD	0.1	38.23	0.9	0.96	0.98
Switzerland	CHE	PPCA	OECD	0	41.48	0.95	0.97	0.99
Chile	CHL	-	OECD	0.37	15.66	0.18	0.53	0.92
China	CHN	-	Non-OECD	0.7	10.47	0.02	0.1	0.54
Colombia	COL	-	OECD	0.12	9.64	0.34	0.4	0.68
Costa Rica	CRI	PPCA	OECD	0	11.97	0.56	0.65	0.81
Czechia	CZE	-	OECD	0.53	26.64	0.19	0.86	0.99
Germany	**DEU**	**PPCA**	**OECD**	**0.44**	**36.56**	**0.51**	**0.88**	**0.98**
Denmark	DNK	PPCA	OECD	0.25	36.74	0.76	0.95	0.98
Dominican Republic	DOM	-	Non-OECD	0.13	10.45	0.34	0.34	0.66
Spain	**ESP**	**PPCA**	**OECD**	**0.19**	**29.34**	**0.69**	**0.88**	**0.93**
Ethiopia	ETH	PPCA	Non-OECD	0	1.09	0.31	0.32	0.38
Finland	FIN	PPCA	OECD	0.13	34.2	0.83	0.93	0.98
Fiji	FJI	PPCA	Non-OECD	0.05	4.68	0.32	0.41	0.51
France	FRA	PPCA	OECD	0.02	33.07	0.89	0.93	0.97
United Kingdom	GBR	PPCA	OECD	0.23	35.61	0.76	0.95	0.98
Guinea	GIN	-	Non-OECD	0.1	1.06	0.2	0.35	0.53
Gambia	GMB	-	Non-OECD	0.1	1.75	0.21	0.35	0.44
Greece	**GRC**	**PPCA**	**OECD**	**0.43**	**27.5**	**0.32**	**0.89**	**0.95**
Guatemala	GTM	-	Non-OECD	0.21	5.21	0.16	0.15	0.4
Hong Kong SAR China	HKG	-	Non-OECD	0.65	47.29	0.46	0.99	1
Honduras	HND	-	Non-OECD	0.01	4.17	0.36	0.37	0.48
Croatia	**HRV**	**PPCA**	**OECD**	**0.21**	**17.82**	**0.4**	**0.63**	**0.82**
Hungary	**HUN**	**PPCA**	**OECD**	**0.19**	**19.5**	**0.46**	**0.79**	**0.92**
Indonesia	IDN	-	Non-OECD	0.56	5.18	0.03	0.02	0.41
India	IND	-	Non-OECD	0.75	4.35	0.01	0.03	0.36
Ireland	IRL	PPCA	OECD	0.26	38.78	0.78	0.96	0.99
Israel	ISR	PPCA	OECD	0.45	28.45	0.31	0.92	0.98
Italy	ITA	PPCA	OECD	0.16	28.17	0.7	0.89	0.95
Japan	JPN	-	OECD	0.33	34.58	0.62	0.78	0.97
Kazakhstan	KAZ	-	Non-OECD	0.72	14.02	0.02	0.72	0.91
Kyrgyzstan	KGZ	-	Non-OECD	0.13	2.45	0.19	0.19	0.39
Cambodia	KHM	-	Non-OECD	0.48	2.37	0.03	0	0.01
South Korea	KOR	-	OECD	0.43	31.93	0.41	0.82	1
Laos	LAO	-	Non-OECD	0.05	3.06	0.29	0	0.01
Liberia	LBR	-	Non-OECD	0.1	0.49	0.19	0.31	0.36
Liechtenstein	LIE	PPCA	Non-OECD	0	234.47	1	1	1
Sri Lanka	LKA	-	Non-OECD	0.34	5.89	0.09	0.08	0.64
Lesotho	LSO	-	Non-OECD	0.1	1.36	0.21	0.34	0.42
Lithuania	LTU	PPCA	OECD	0	17.71	0.69	0.81	0.93
Luxembourg	LUX	PPCA	OECD	0	81.67	1	1	1
Latvia	LVA	PPCA	OECD	0	15.64	0.64	0.78	0.92
Morocco	MAR	-	Non-OECD	0.56	4.78	0.03	0.04	0.7
Madagascar	MDG	-	Non-OECD	0.1	0.89	0.2	0.17	0.33
Mexico	MEX	PPCA	OECD	0.11	14.76	0.47	0.63	0.84
Marshall Islands	MHL	PPCA	Non-OECD	0	6.47	0.43	0.43	0.42
North Macedonia	**MKD**	**PPCA**	**Non-OECD**	**0.58**	**9.81**	**0.03**	**0.08**	**0.8**

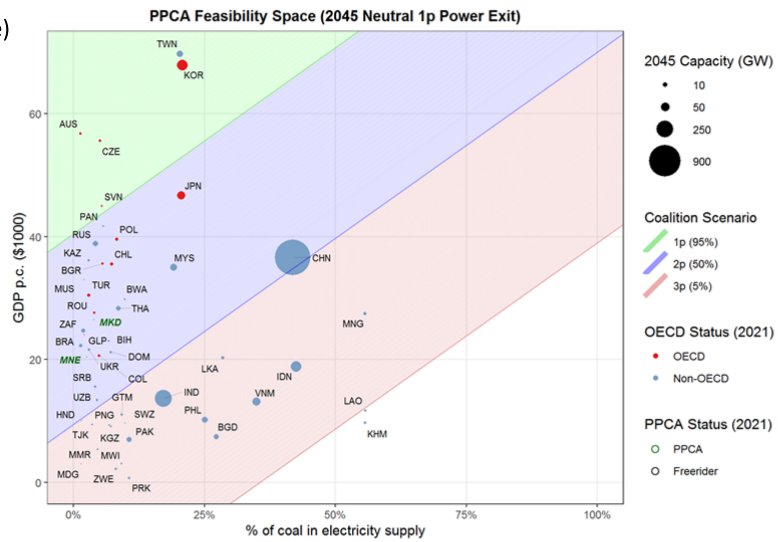
Mali	MLI	-	Non-OECD	0.1	1.23	0.21	0.32	0.36
Myanmar (Burma)	MMR	-	Non-OECD	0.02	1.27	0.29	0.31	0.41
Montenegro	**MNE**	**PPCA**	**Non-OECD**	**0.5**	**9.52**	**0.05**	**0.17**	**0.71**
Mongolia	MNG	-	Non-OECD	0.93	5.78	0	0	0.04
Mauritania	MRT	-	Non-OECD	0.1	2.07	0.22	0.36	0.45
Malawi	MWI	-	Non-OECD	0.1	0.93	0.2	0	0.24
Malaysia	MYS	-	Non-OECD	0.42	14.99	0.13	0.38	0.92
Niger	NER	-	Non-OECD	0.42	0.71	0.04	0.31	0.34
Niue	NIU	PPCA	Non-OECD	0	9.67	0.51	0.51	0.51
Netherlands	NLD	PPCA	OECD	0.39	41.86	0.7	0.92	0.99
New Zealand	NZL	PPCA	OECD	0.04	28.65	0.83	0.89	0.95
Panama	PAN	-	Non-OECD	0.07	14.17	0.51	0.62	0.94
Peru	**PER**	**PPCA**	**Non-OECD**	**0.01**	**9.87**	**0.5**	**0.65**	**0.87**
Philippines	PHL	-	Non-OECD	0.45	3.64	0.04	0.07	0.46
Papua New Guinea	PNG	-	Non-OECD	0.05	2.84	0.29	0.3	0.5
Poland	POL	-	OECD	0.81	20.64	0.03	0.34	0.92
North Korea	PRK	-	Non-OECD	0.21	1.31	0.12	0.18	0.31
Portugal	PRT	PPCA	OECD	0.29	21.76	0.38	0.82	0.91
Romania	ROU	-	OECD	0.28	12.4	0.21	0.67	0.81
Russia	RUS	-	Non-OECD	0.15	16.94	0.46	0.71	0.93
Rwanda	RWA	-	Non-OECD	0.1	1.31	0.21	0.33	0.39
Senegal	SEN	PPCA	Non-OECD	0	1.8	0.33	0.33	0.41
Singapore	SGP	-	Non-OECD	0.01	58.49	0.99	1	1
Sierra Leone	SLE	-	Non-OECD	0.1	0.93	0.2	0.32	0.37
El Salvador	SLV	PPCA	Non-OECD	0	7.31	0.45	0.48	0.6
Somalia	SOM	-	Non-OECD	0.1	0.65	0.2	0.3	0.3
Serbia	SRB	-	Non-OECD	0.76	11.76	0.02	0.06	0.59
Slovakia	**SVK**	**PPCA**	**OECD**	**0.13**	**24.61**	**0.67**	**0.87**	**0.97**
Slovenia	SVN	-	OECD	0.3	28.64	0.53	0.8	0.97
Sweden	SWE	PPCA	OECD	0.01	39.89	0.94	0.97	0.99
Chad	TCD	-	Non-OECD	0.1	1.42	0.21	0.32	0.38
Thailand	THA	-	Non-OECD	0.19	9.32	0.24	0.49	0.86
Tajikistan	TJK	-	Non-OECD	0.02	2.03	0.31	0.27	0.45
Turkey	TUR	-	OECD	0.29	12.98	0.21	0.21	0.86
Tuvalu	TUV	PPCA	Non-OECD	0	5.44	0.41	0.4	0.39
Taiwan	TWN	-	Non-OECD	0.47	22.92	0.2	0.8	0.99
Uganda	UGA	-	Non-OECD	0.1	1.32	0.21	0.33	0.39
Ukraine	UKR	-	Non-OECD	0.35	7.16	0.1	0.44	0.73
Uruguay	**URY**	**PPCA**	**Non-OECD**	**0**	**15.04**	**0.63**	**0.75**	**0.91**
United States	USA	-	OECD	0.34	46.25	0.82	0.97	1
Uzbekistan	UZB	-	Non-OECD	0.04	3.11	0.3	0.29	0.53
Vietnam	VNM	-	Non-OECD	0.3	3.77	0.1	0.03	0.39
Vanuatu	VUT	PPCA	Non-OECD	0.05	5.33	0.34	0.42	0.54
South Africa	ZAF	-	Non-OECD	0.93	10.22	0.01	0.37	0.79
Zimbabwe	ZWE	-	Non-OECD	0.47	0.43	0.03	0	0.24

Table SF1. List of the 41 current PPCA members and the 62 non-participating nations which had >1% coal-power-shares in 2015 (Coal Share 2015). The PPCA column distinguishes the two categories. Both inputs to the logit model, i.e. 2015 coal-power-shares and GDP per capita (in nominal 2005 USD), are shown, along with returned accession probabilities in 2015, 2025, and 2045 (Prob.year). Rows in bold indicate new PPCA signees since the Jewell et al., (2019) study.



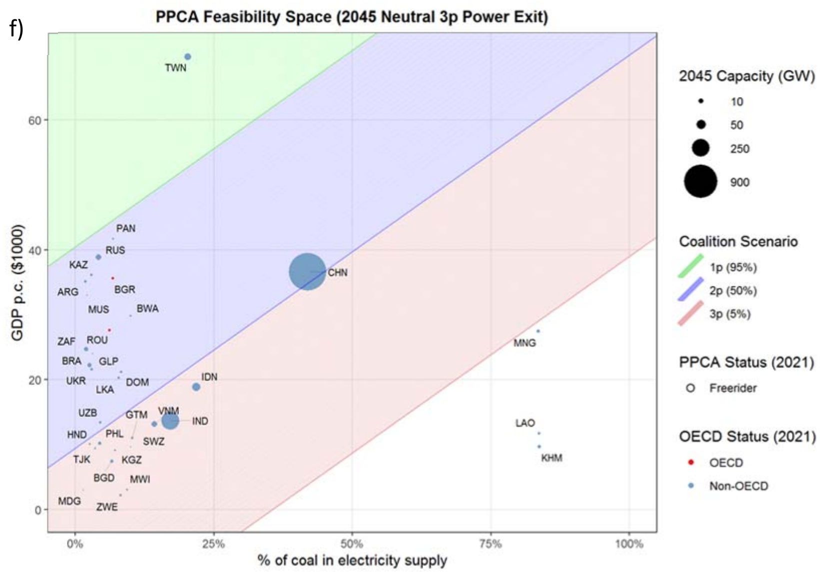
a)
PPCA Feasibility Space (2025 Brown Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2025 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider
b)
PPCA Feasibility Space (2045 Brown 1p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider
c)
PPCA Feasibility Space (2045 Brown 2p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider
d)
PPCA Feasibility Space (2045 Brown 3p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
PPCA Status (2021)
Freerider
OECD Status (2021)
OECD
Non-OECD

e)



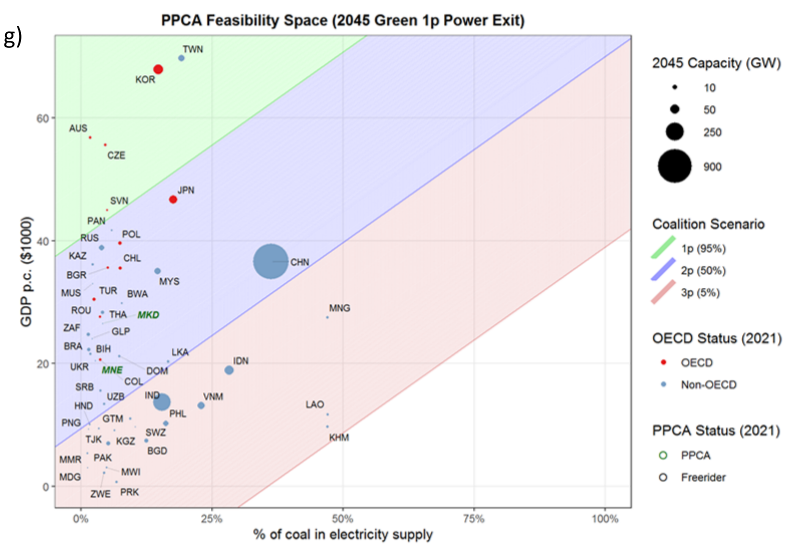
PPCA Feasibility Space (2045 Neutral 1p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

f)



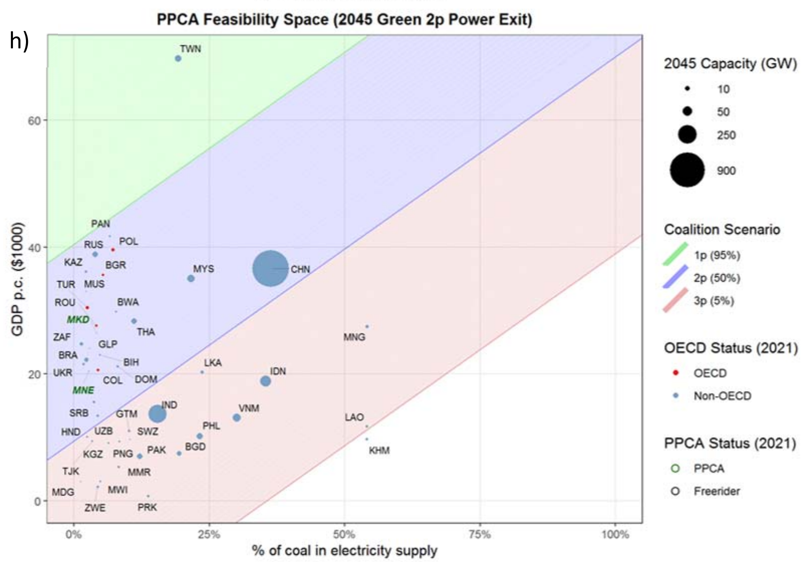
PPCA Feasibility Space (2045 Neutral 3p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
PPCA Status (2021)
Freerider
OECD Status (2021)
OECD
Non-OECD

g)



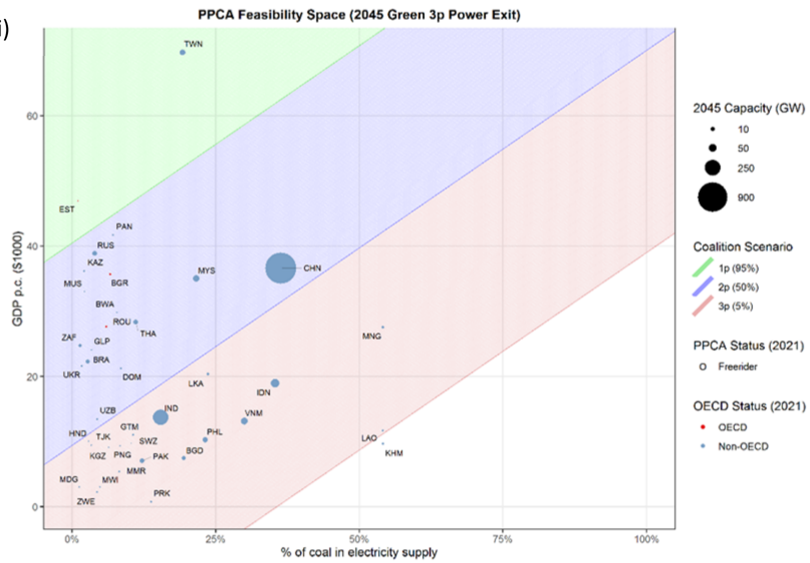
PPCA Feasibility Space (2045 Green 1p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

h)

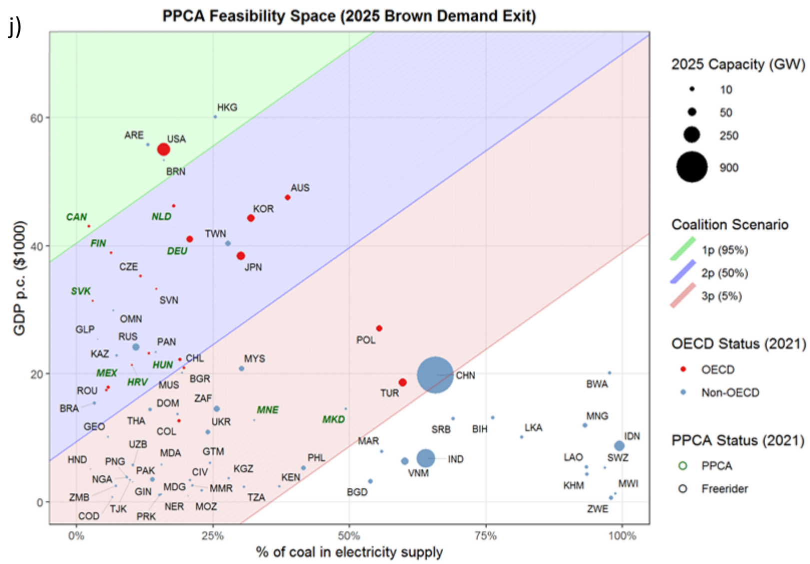


PPCA Feasibility Space (2045 Green 2p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

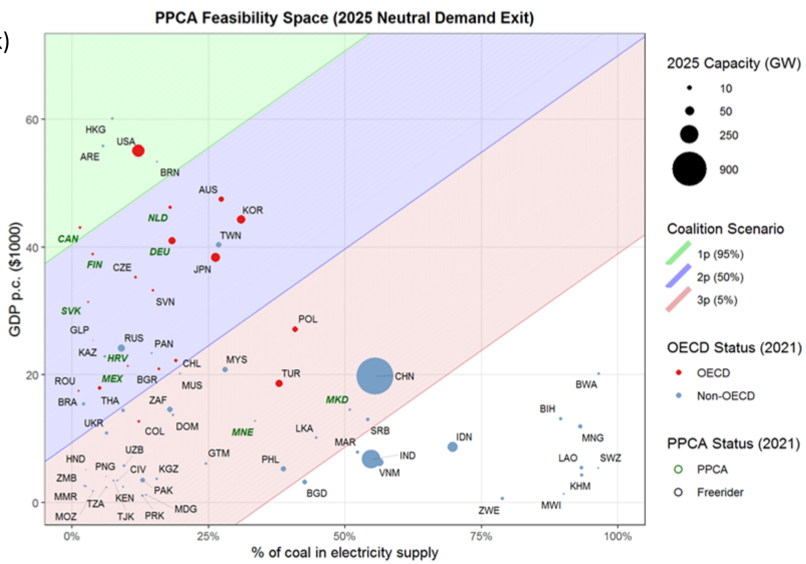
i)


PPCA Feasibility Space (2045 Green 3p Power Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
PPCA Status (2021)
Freerider
OECD Status (2021)
OECD
Non-OECD

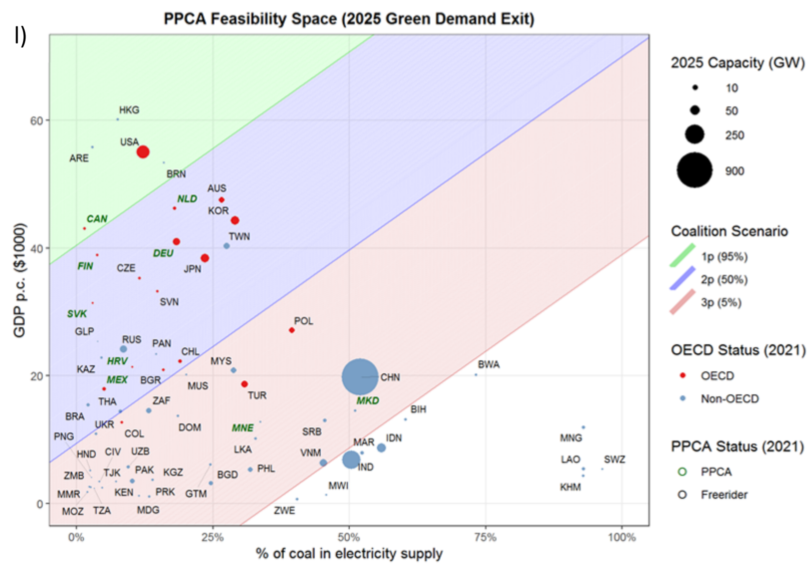
j)


PPCA Feasibility Space (2025 Brown Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2025 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

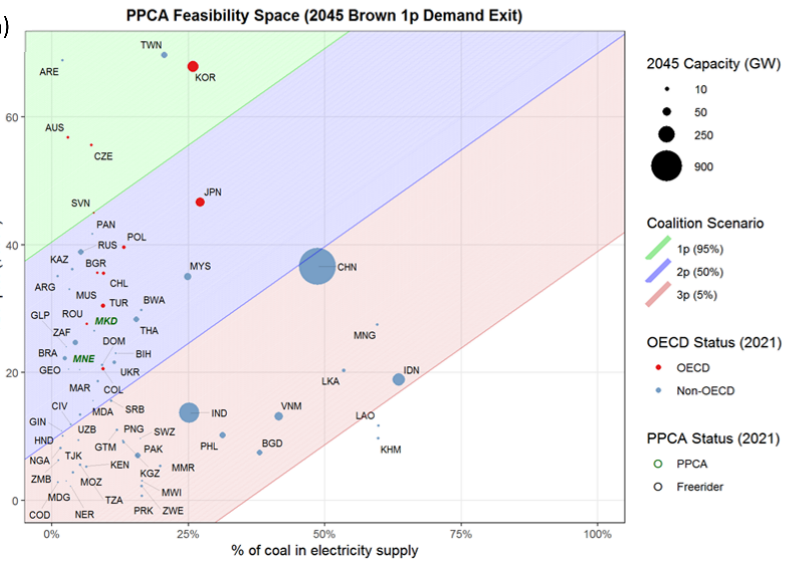
k)


PPCA Feasibility Space (2025 Neutral Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2025 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

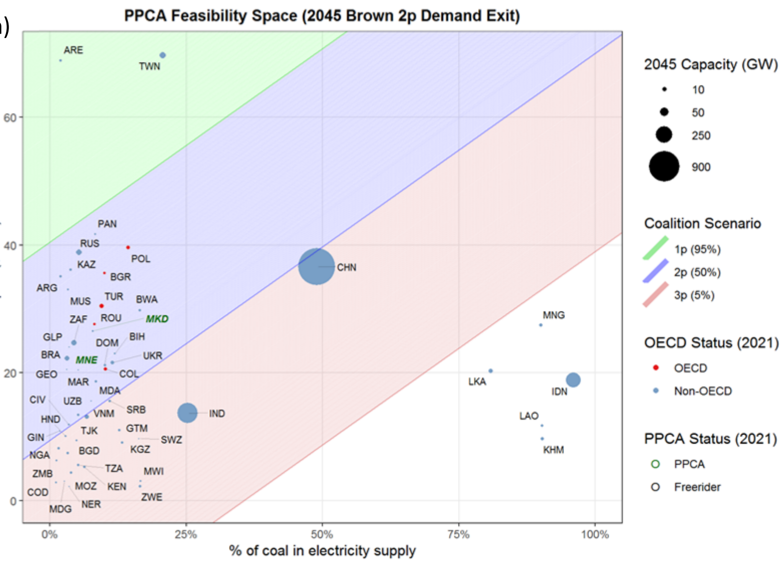
l)


PPCA Feasibility Space (2025 Green Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2025 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

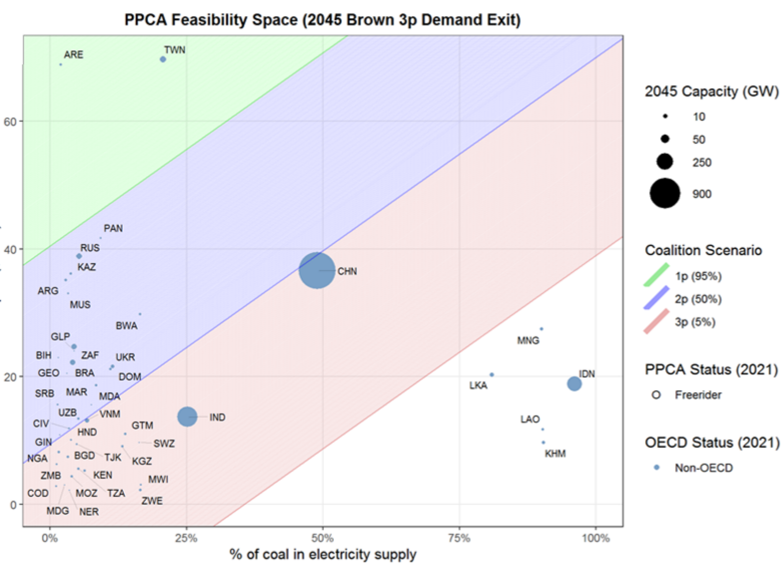
m)


PPCA Feasibility Space (2045 Brown 1p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

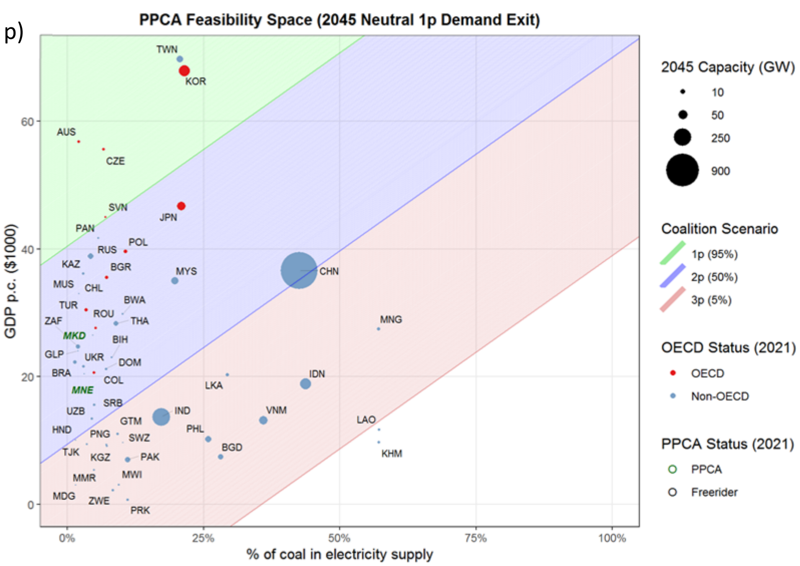
n)


PPCA Feasibility Space (2045 Brown 2p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

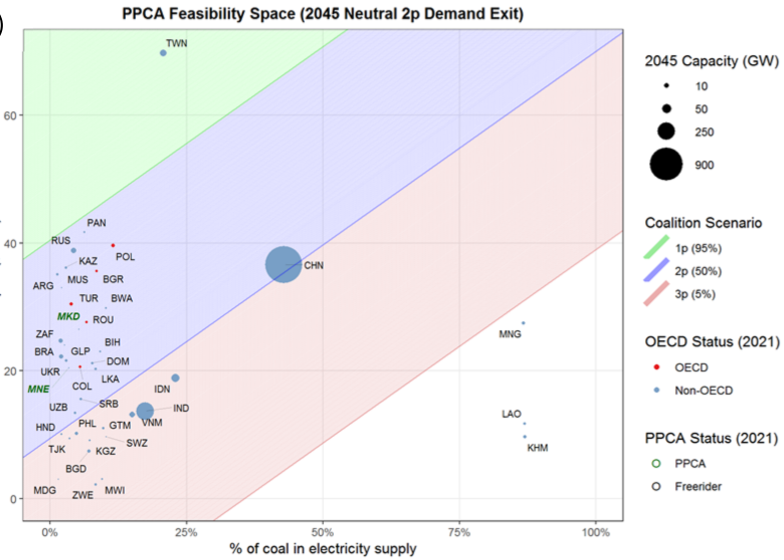
o)


PPCA Feasibility Space (2045 Brown 3p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
PPCA Status (2021)
Freerider
OECD Status (2021)
Non-OECD

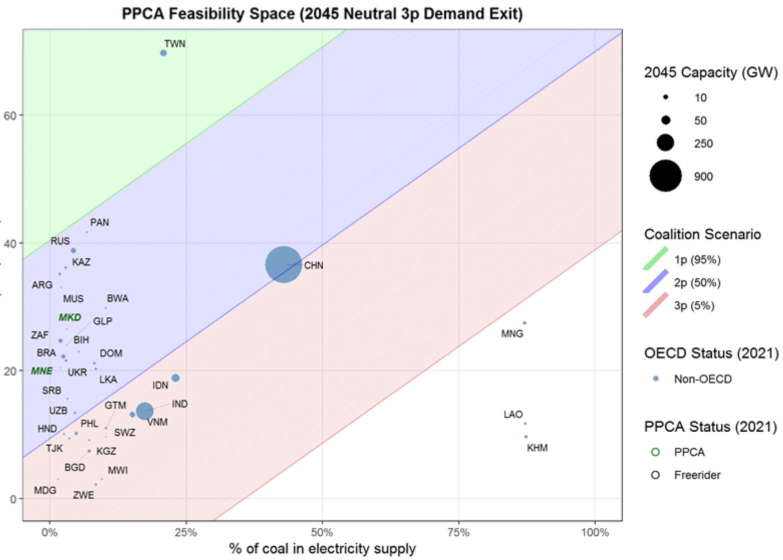
p)


PPCA Feasibility Space (2045 Neutral 1p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

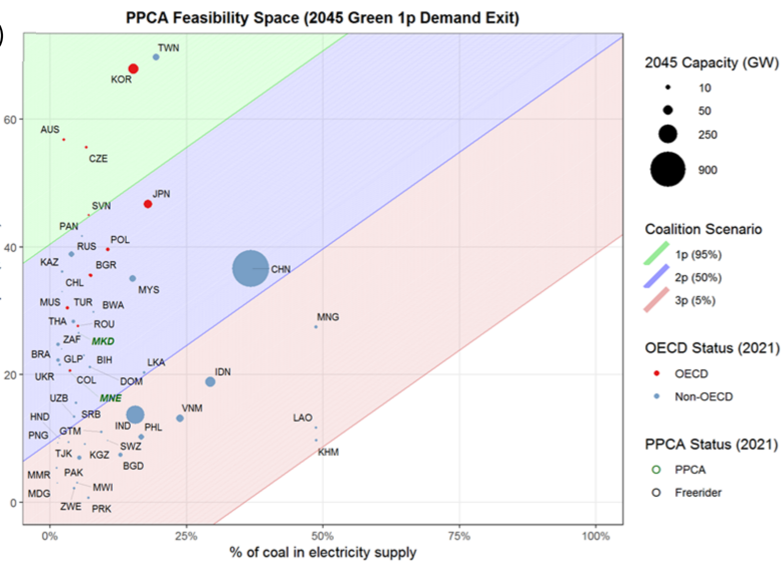
q)


PPCA Feasibility Space (2045 Neutral 2p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

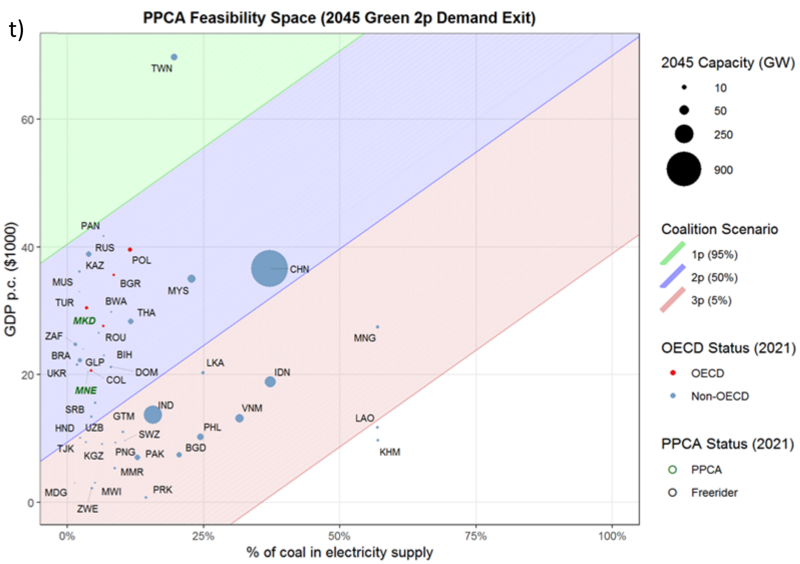
r)

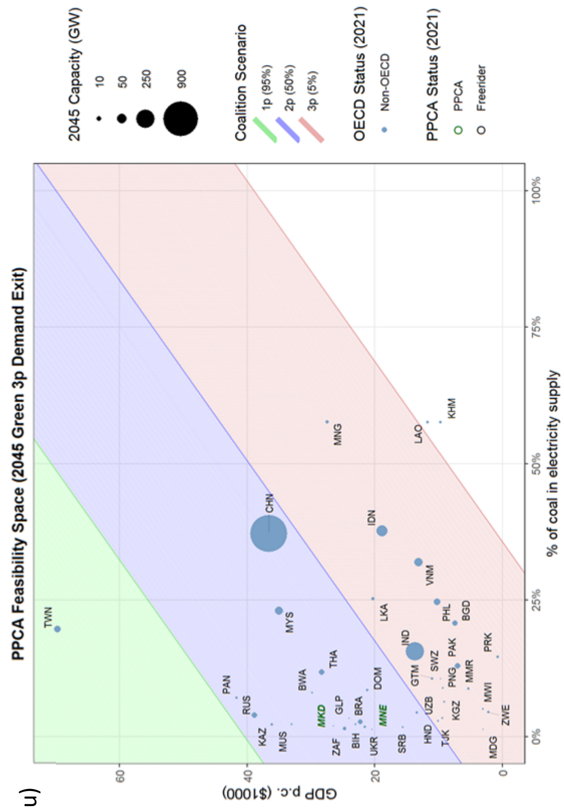

PPCA Feasibility Space (2045 Neutral 3p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
Non-OECD
PPCA Status (2021)
PPCA
Freerider

s)


PPCA Feasibility Space (2045 Green 1p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

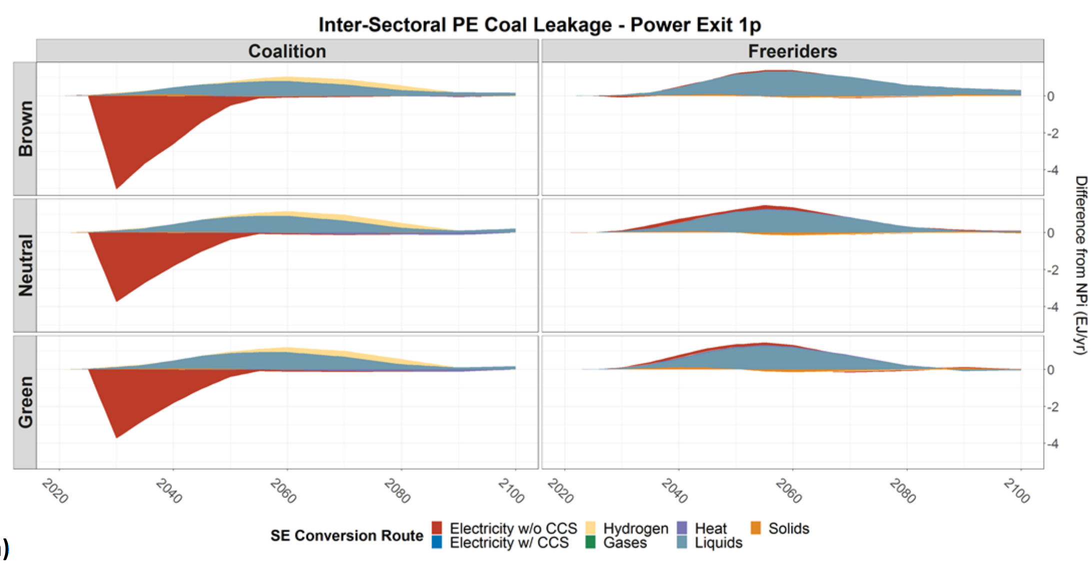
t)


PPCA Feasibility Space (2045 Green 2p Demand Exit)
GDP p.c. ($1000)
% of coal in electricity supply
2045 Capacity (GW)
10
50
250
900
Coalition Scenario
1p (95%)
2p (50%)
3p (5%)
OECD Status (2021)
OECD
Non-OECD
PPCA Status (2021)
PPCA
Freerider

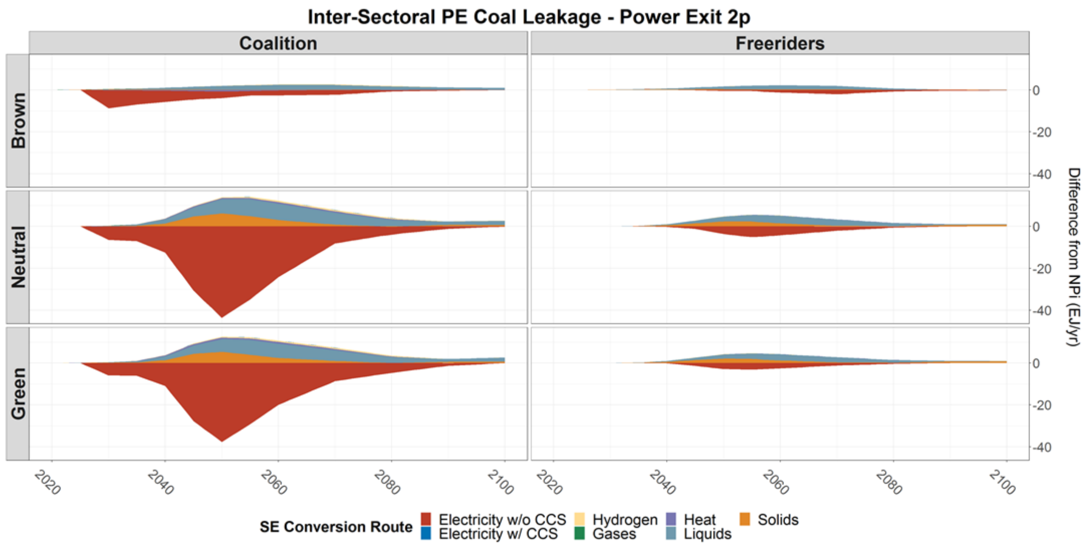


u)

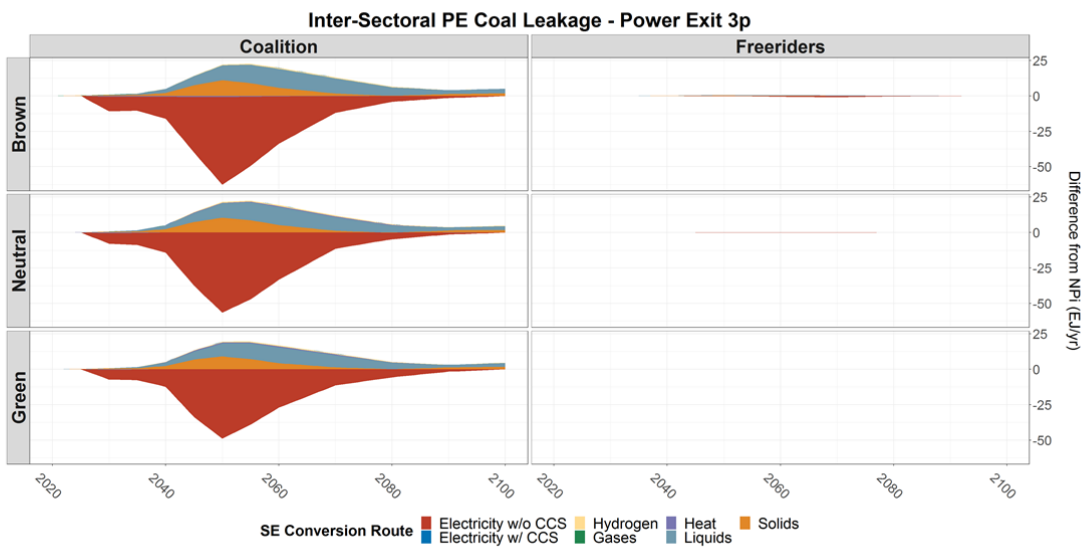
Figure SF1. Coalition scenarios returned by CoaLogit for *power-exit* (a-i) and *demand-exit* (j-u) policy scenarios. Includes the 2025 OECD accession stage (a-b; j-l) and 2045 non-OECD stage (c-l; m-u) for each policy scenario following each Covid recovery.



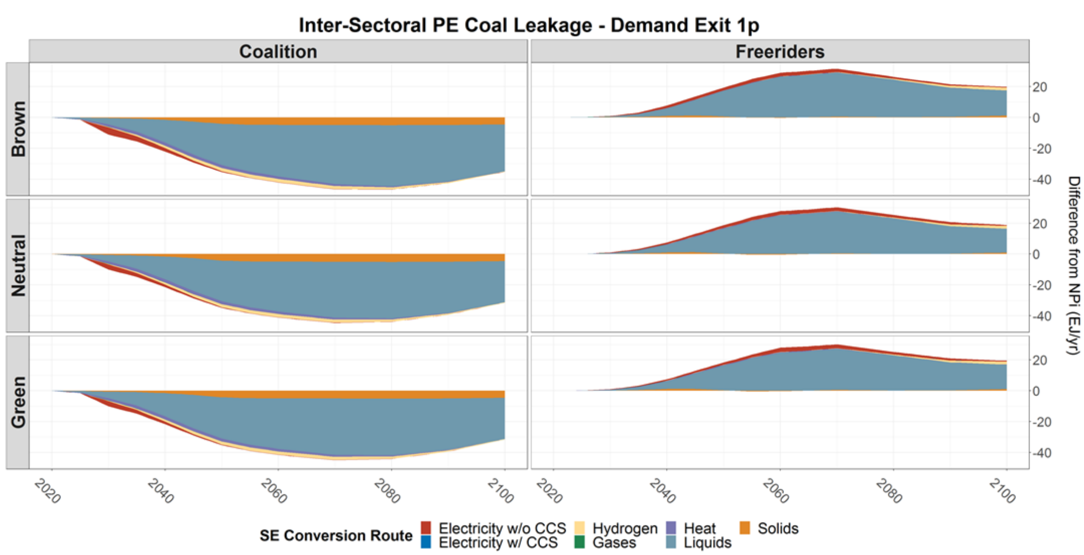
a)


Inter-Sectoral PE Coal Leakage - Power Exit 2p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
0
-20
-40
2020
2040
2060
2080
2100
SE Conversion Route
Electricity w/o CCS
Electricity w/ CCS
Hydrogen
Gases
Heat
Liquids
Solids

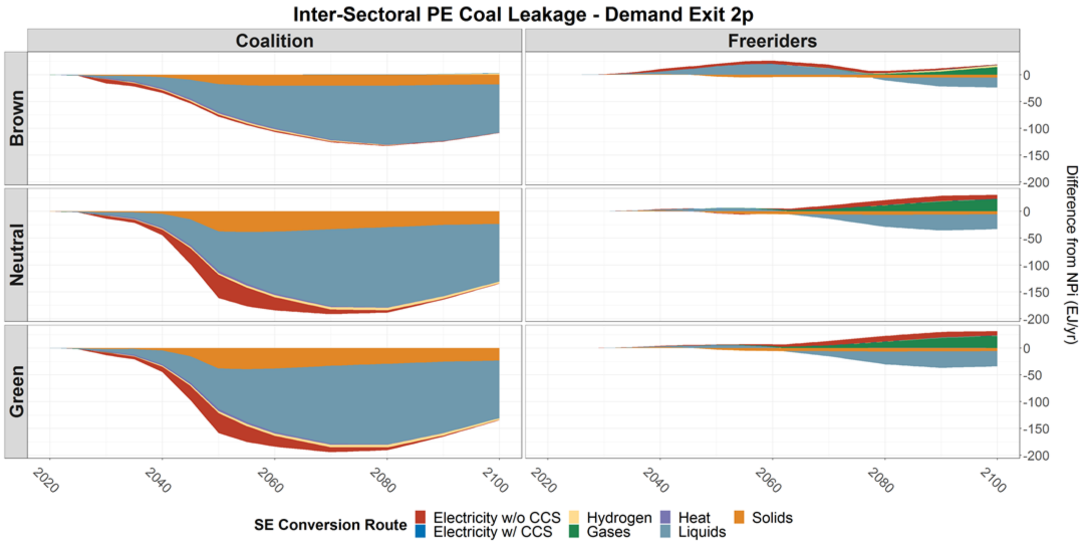
b)


Inter-Sectoral PE Coal Leakage - Power Exit 3p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
25
0
-25
-50
2020
2040
2060
2080
2100
SE Conversion Route
Electricity w/o CCS
Electricity w/ CCS
Hydrogen
Gases
Heat
Liquids
Solids

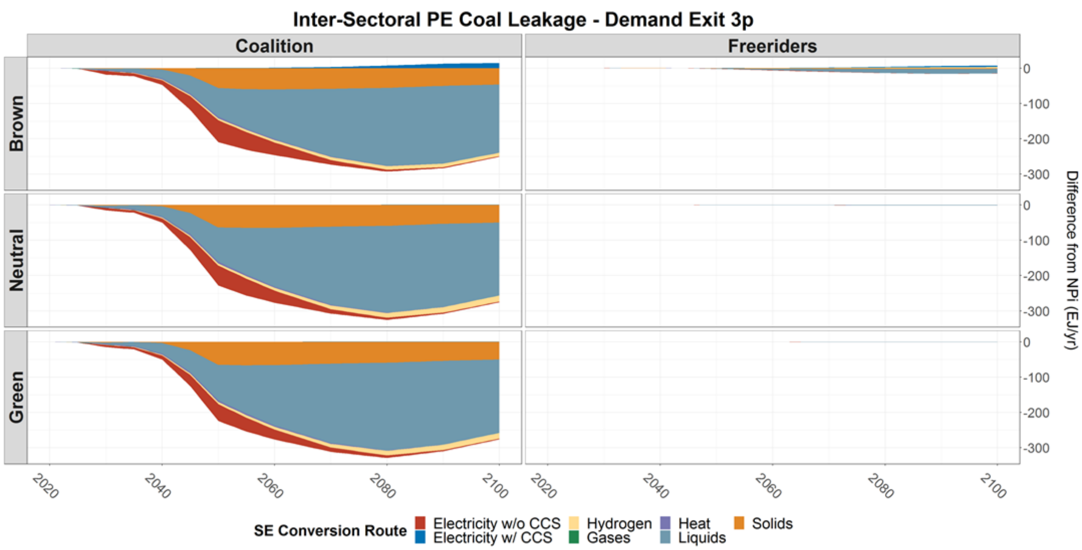
c)


Inter-Sectoral PE Coal Leakage - Demand Exit 1p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
20
0
-20
-40
2020
2040
2060
2080
2100
SE Conversion Route
Electricity w/o CCS
Electricity w/ CCS
Hydrogen
Gases
Heat
Liquids
Solids

d)

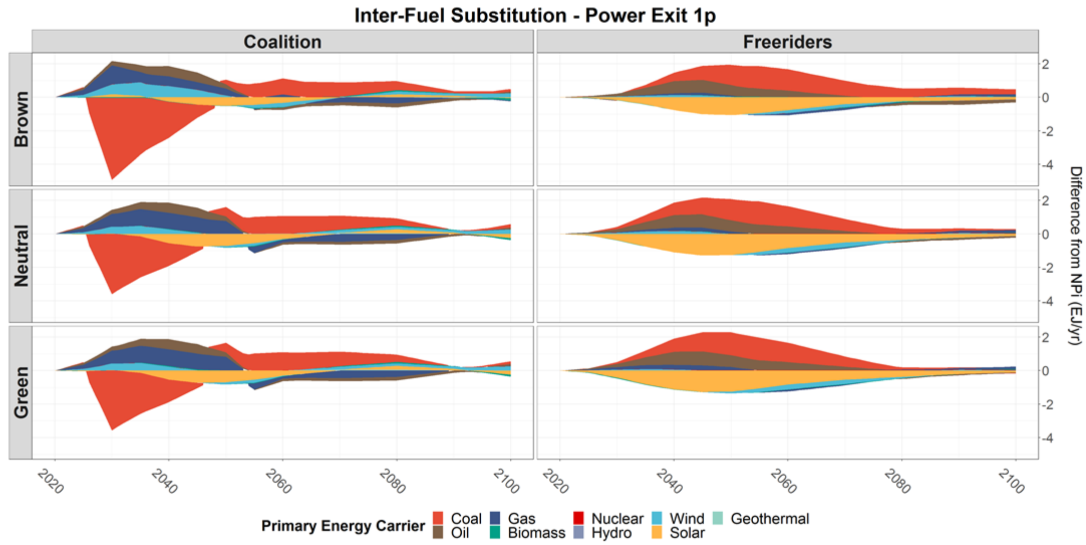


e)

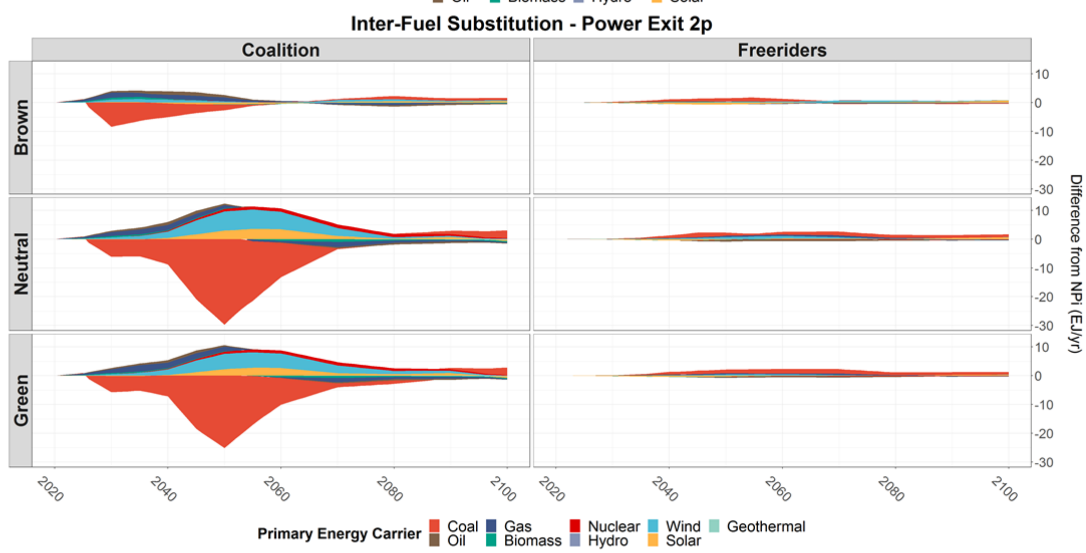


f)

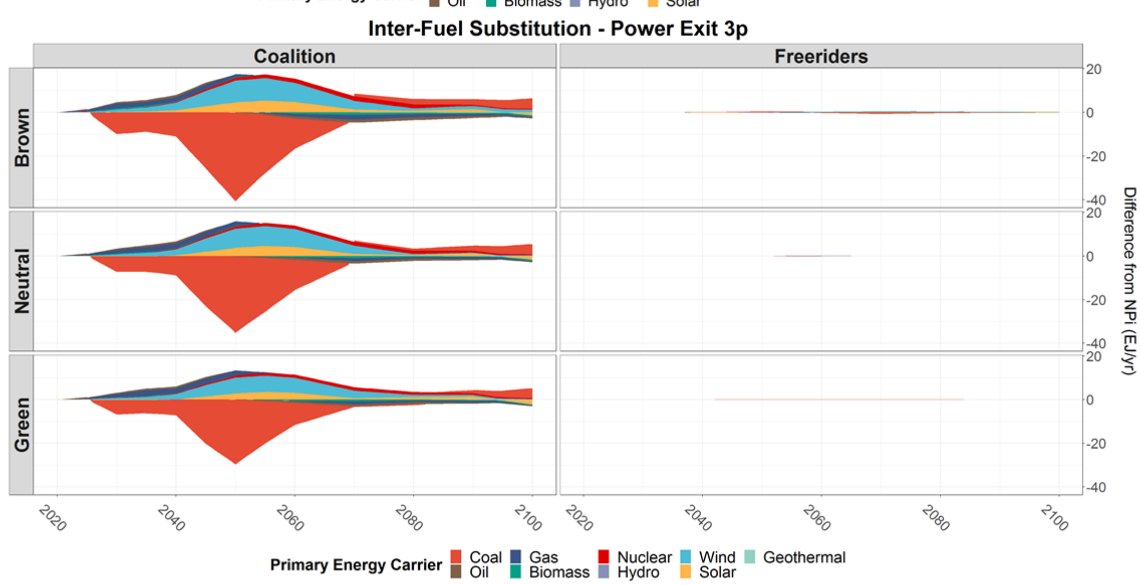
Figure SF2. Coal market response to *power-exit* (a-c) and *demand-exit* (d-f) policy scenarios. Note that the y-scales vary significantly.


Inter-Fuel Substitution - Power Exit 1p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
Primary Energy Carrier
Coal
Oil
Gas
Biomass
Nuclear
Hydro
Wind
Solar
Geothermal

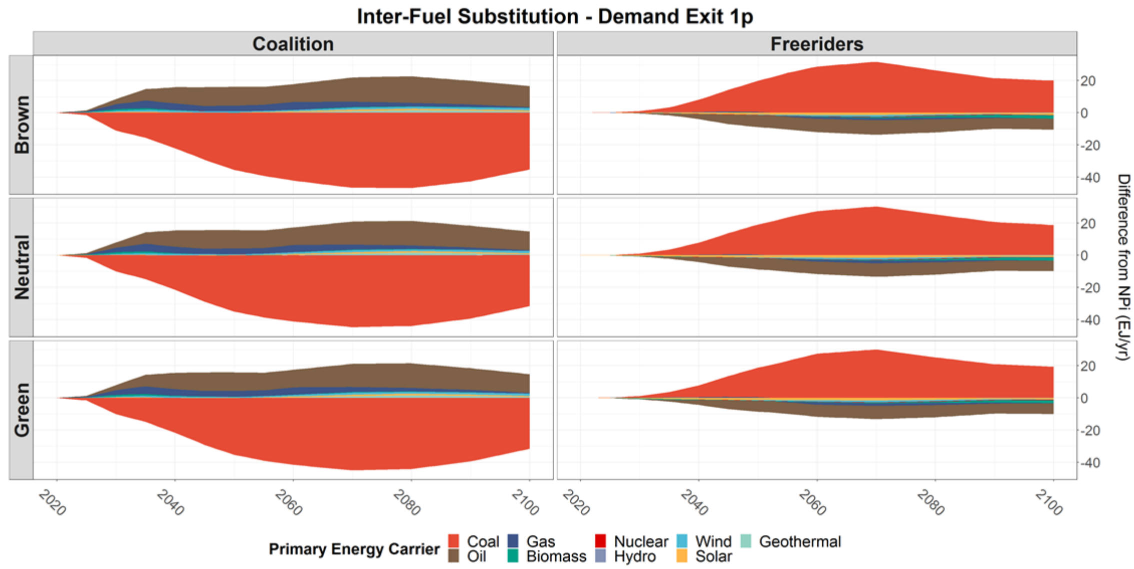
a)


Inter-Fuel Substitution - Power Exit 2p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
Primary Energy Carrier
Coal
Oil
Gas
Biomass
Nuclear
Hydro
Wind
Solar
Geothermal

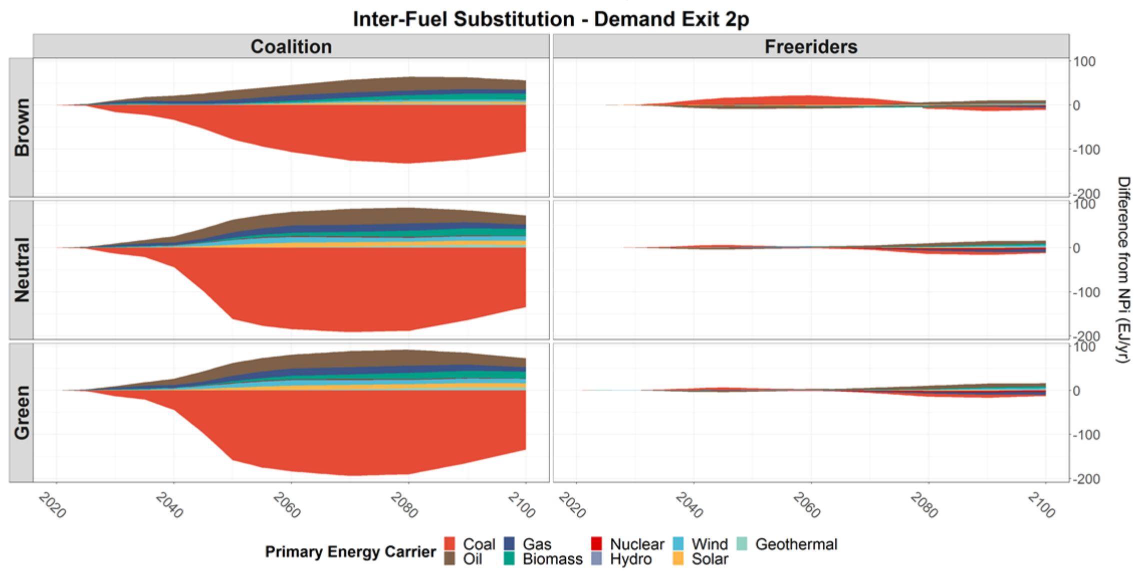
b)


Inter-Fuel Substitution - Power Exit 3p
Coalition
Freeriders
Brown
Neutral
Green
Difference from NPi (EJ/yr)
Primary Energy Carrier
Coal
Oil
Gas
Biomass
Nuclear
Hydro
Wind
Solar
Geothermal

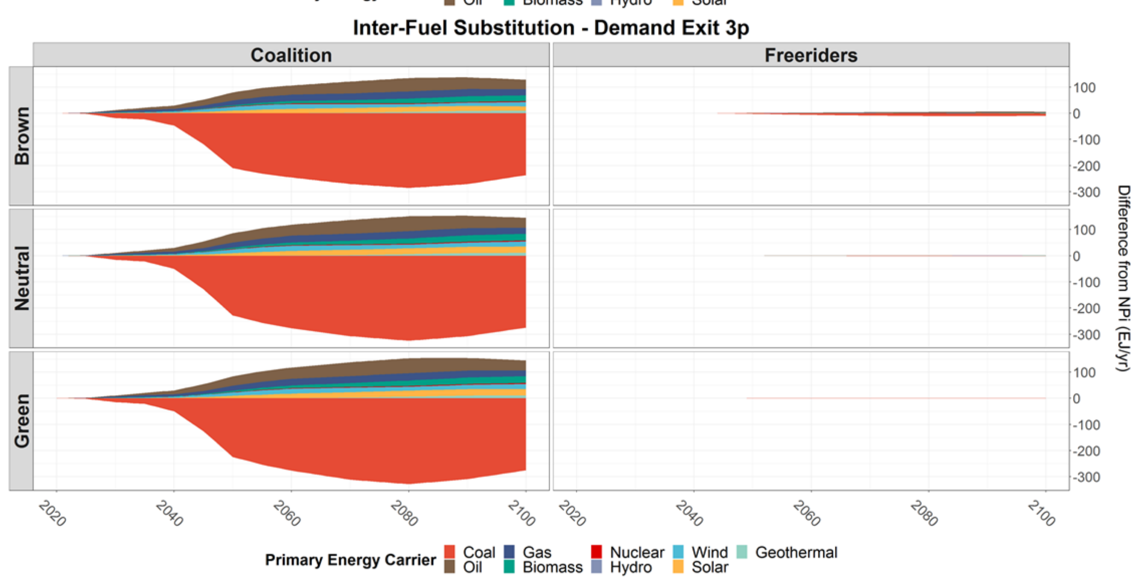
c)



d)

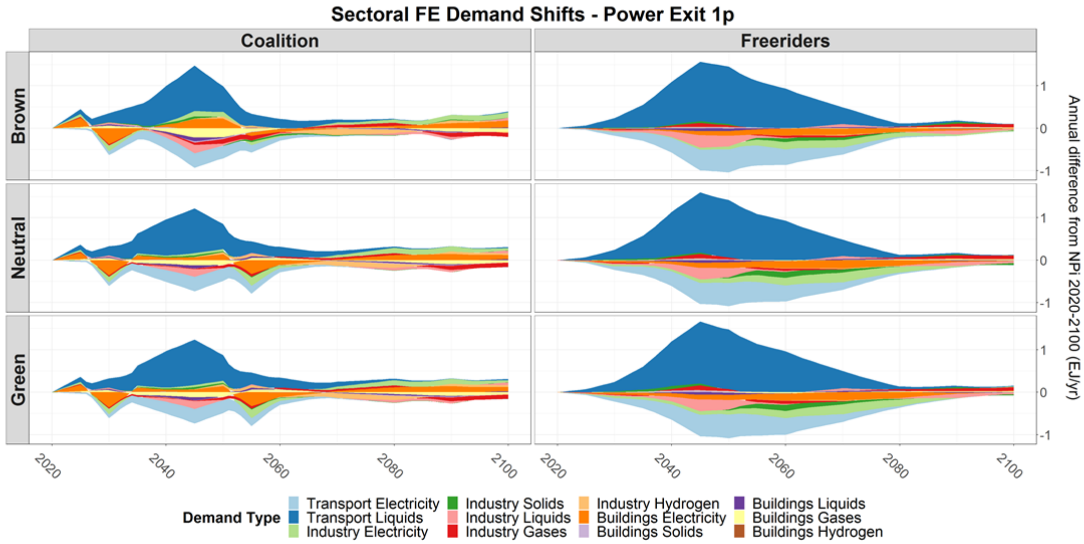


e)

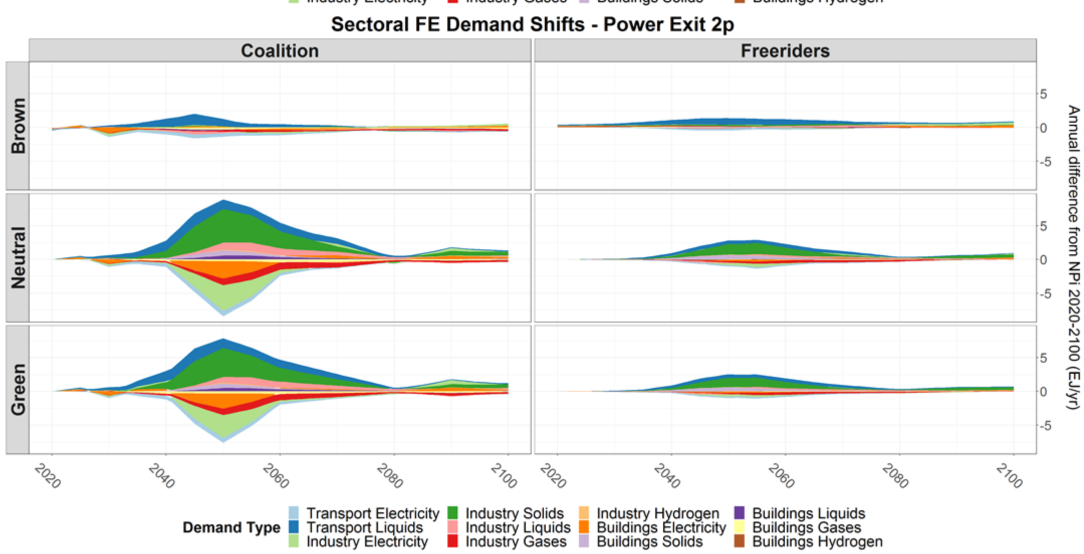


f)

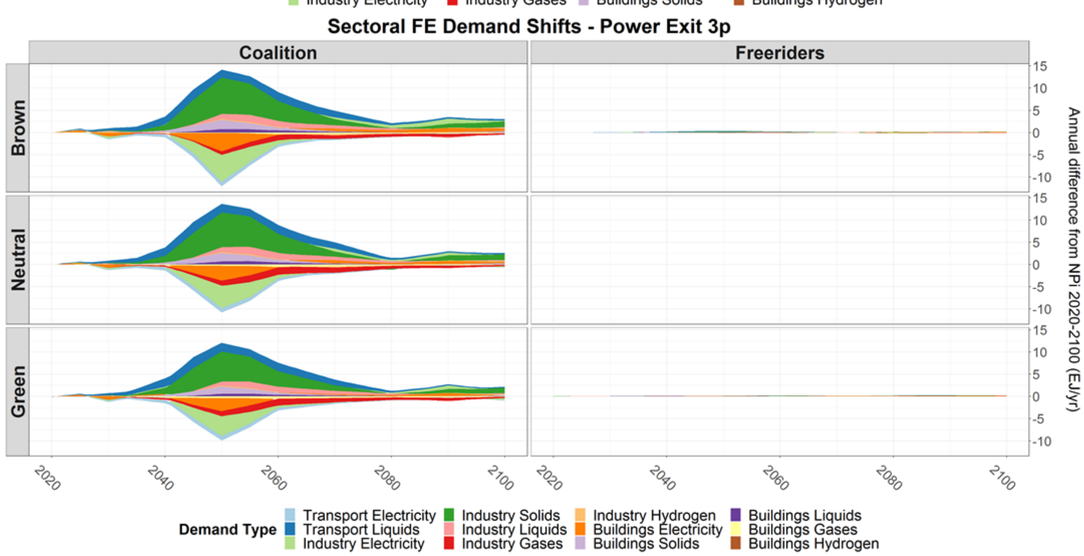
Figure SF3. Energy system response to all *power-exit* (a-c) and *demand-exit* (d-f) policy scenarios. Note that the y-scales vary significantly.


Sectoral FE Demand Shifts - Power Exit 1p
Coalition
Freeriders
Brown
Neutral
Green
Annual difference from NPi 2020-2100 (EJ/yr)
2020
2040
2060
2080
2100
Demand Type
Transport Electricity
Transport Liquids
Industry Electricity
Industry Solids
Industry Liquids
Industry Gases
Industry Hydrogen
Buildings Electricity
Buildings Solids
Buildings Liquids
Buildings Gases
Buildings Hydrogen

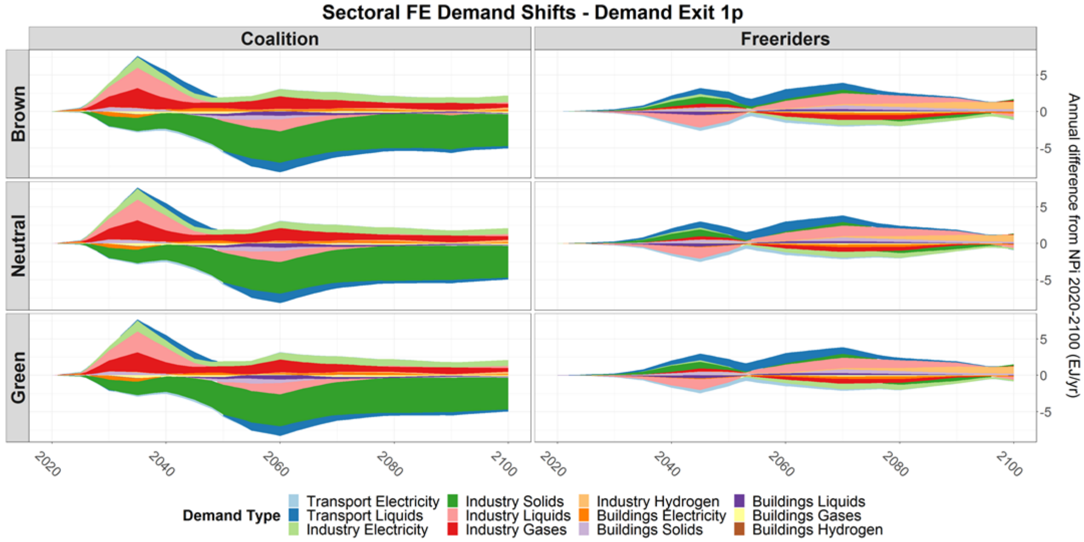
a)


Sectoral FE Demand Shifts - Power Exit 2p
Coalition
Freeriders
Brown
Neutral
Green
Annual difference from NPi 2020-2100 (EJ/yr)
2020
2040
2060
2080
2100
Demand Type
Transport Electricity
Transport Liquids
Industry Electricity
Industry Solids
Industry Liquids
Industry Gases
Industry Hydrogen
Buildings Electricity
Buildings Solids
Buildings Liquids
Buildings Gases
Buildings Hydrogen

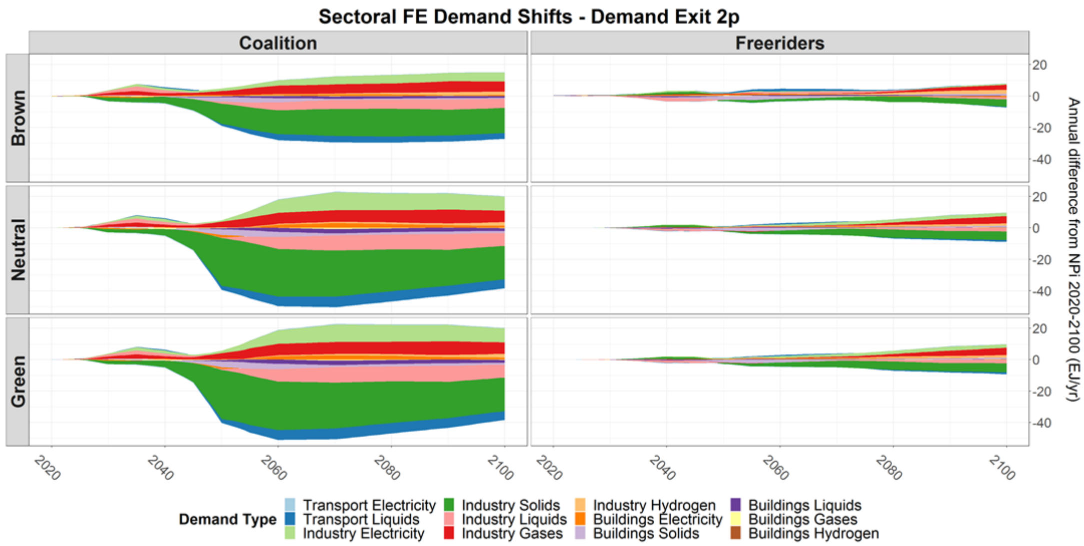
b)


Sectoral FE Demand Shifts - Power Exit 3p
Coalition
Freeriders
Brown
Neutral
Green
Annual difference from NPi 2020-2100 (EJ/yr)
2020
2040
2060
2080
2100
Demand Type
Transport Electricity
Transport Liquids
Industry Electricity
Industry Solids
Industry Liquids
Industry Gases
Industry Hydrogen
Buildings Electricity
Buildings Solids
Buildings Liquids
Buildings Gases
Buildings Hydrogen

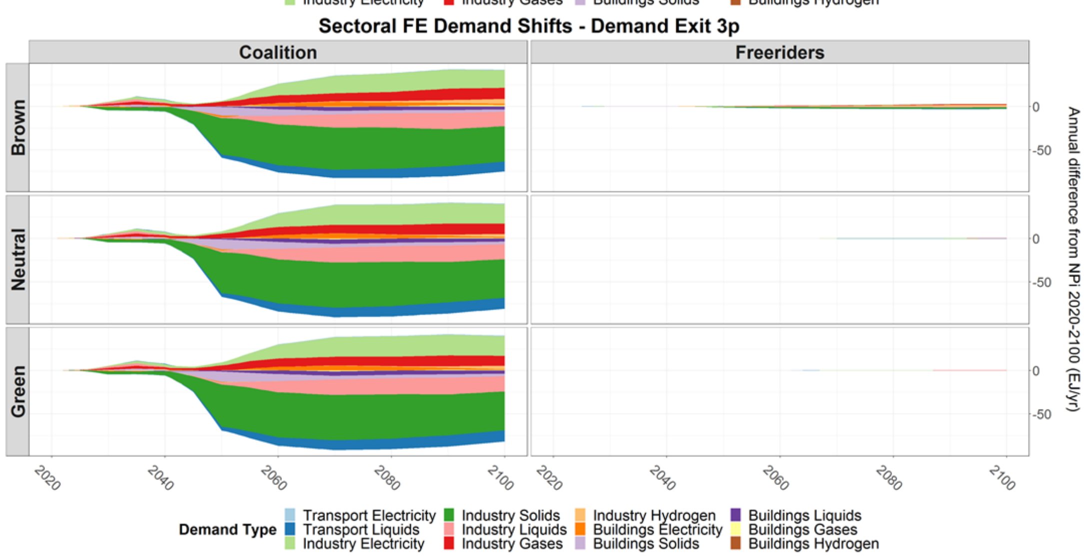
c)



d)



e)



f)

Figure SF4. Impacts of the *power-exit* (a-c) and *demand-exit* (d-f) policy scenarios on final energy (FE) consumption in each sector. Not shown are gases and hydrogen use in transport, and heat used in industry and buildings. Note that the y-scales vary significantly.