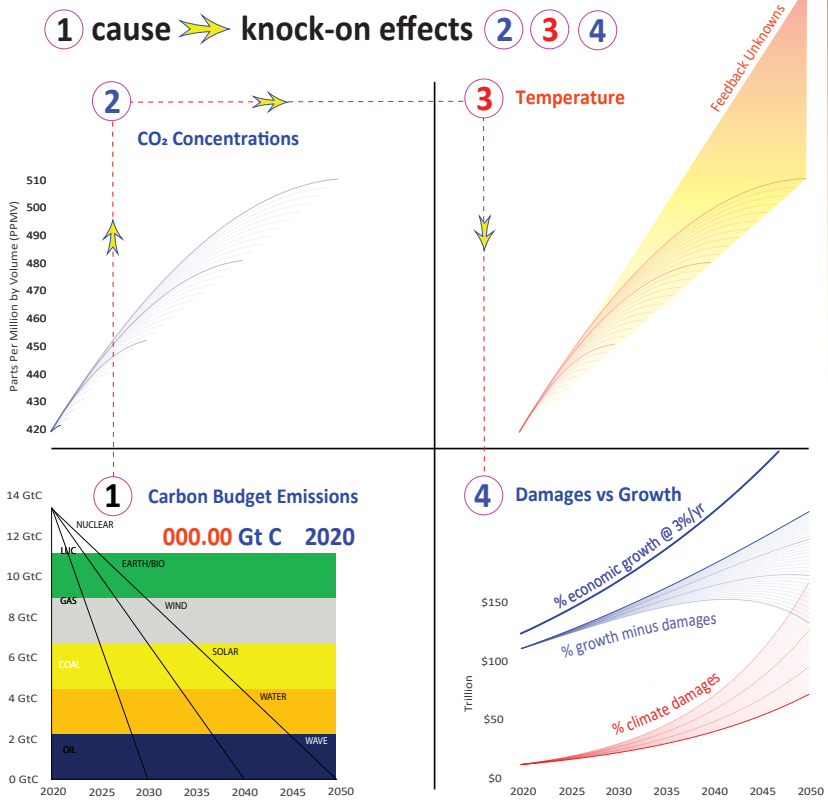
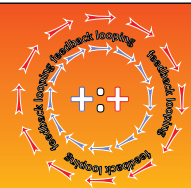
Zero emissions globally 2030-2040-2050



Globally averaged temperature is no more than a statistical construct after-the-facts

Global Av	24-90° N	Arctic	Land	Ocean	Excluded / Included		Feedbacks
2.875	3.375	5.750	3.375	2.575		2050	Positive Feedbacks control Rise of PPMV & T°
2.813	3.313	5.625	3.313	2.513		2049	
2.750	3.250	5.500	3.250	2.450		2048	
2.688	3.188	5.375	3.188	2.388		2047	
2.625	3.125	5.250	3.125	2.325		2046	
2.563	3.063	5.125	3.063	2.263		2045	
2.500	**3.000**	**5.000**	**3.000**	**2.200**		2044	
2.438	2.938	4.875	2.938	2.138		2043	
2.375	2.875	4.750	2.875	2.075		2042	
2.313	2.813	4.625	2.813	2.013		2041	
2.250	2.750	4.500	2.750	1.950		2040	
2.188	2.688	4.375	2.688	1.888		2039	
2.125	2.625	4.250	2.625	1.825		2038	
2.063	2.563	4.125	2.563	1.763		2037	
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050	2036	Limiting T° rise to >2.0° C
1.938	2.438	3.875	2.438	1.638	2048	2035	Emissions contraction to zero by 2035/40 required
1.875	2.375	3.750	2.375	1.575	2046	2034	
1.813	2.313	3.625	2.313	1.513	2044	2033	
1.750	2.250	3.500	2.250	1.450	2042	2032	
1.688	2.188	3.375	2.188	1.388	2040	2031	
1.625	2.125	3.250	2.125	1.325	2038	2030	
1.563	2.063	3.125	2.063	1.263	2036	2029	
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034	**2028**	Limiting T° rise to 1.5° C
1.438	1.938	2.875	1.938	1.138	2032	2027	Emissions contraction to zero by 2025/30 required
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030	2026	
1.313	1.813	2.625	1.813	1.013	2028	2025	
1.250	1.750	2.500	1.750	0.950	2026	2024	
1.188	1.688	2.375	1.688	0.888	2025	2023	
1.125	1.625	2.250	1.625	0.825	2022	2022	
1.063	1.563	2.125	1.563	0.763	2020	2021	
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020	Global Average T° at 1.0° C in 2020 . . .



Rising risks in this chain of causation . . .

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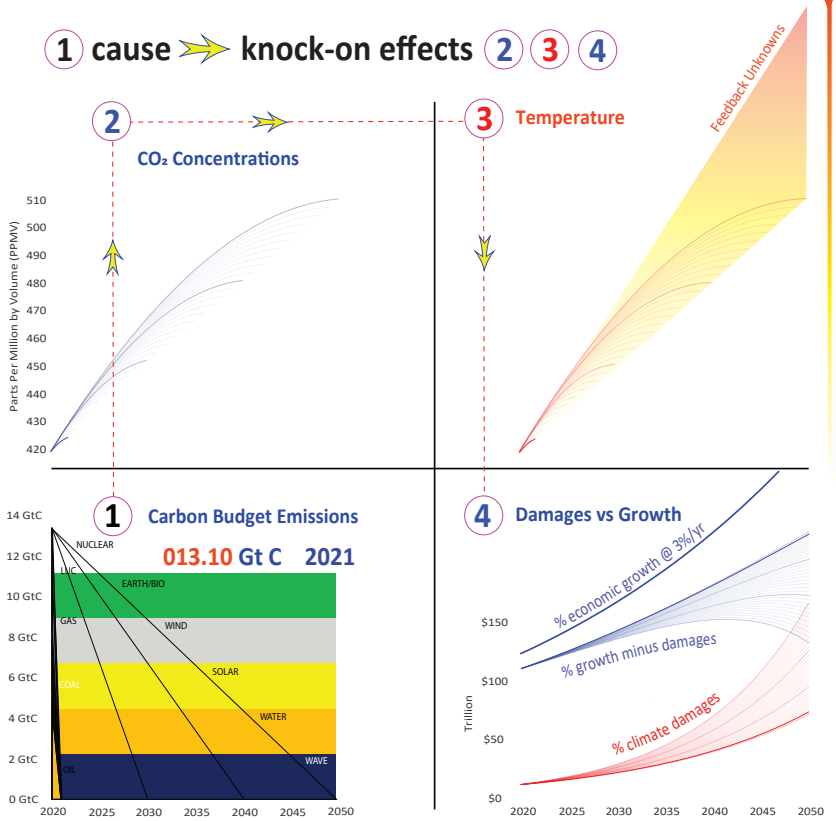
Zero emissions globally 2030-2040-2050

1 cause → knock-on effects 2 3 4



Globally averaged temperature is no more than a statistical construct after-the-facts

Global Av	24-90° N	Arctic	Land	Ocean		
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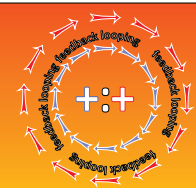
1.000	**1.500**	**2.000**	**1.500**	**0.700**	2020	2020

Excluded / Included

Feedbacks

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C

Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C

Emissions contraction to zero by 2025/30 required

Global Average T° at 1.0° C in 2020 . . .

Rising risks in this chain of causation . . .

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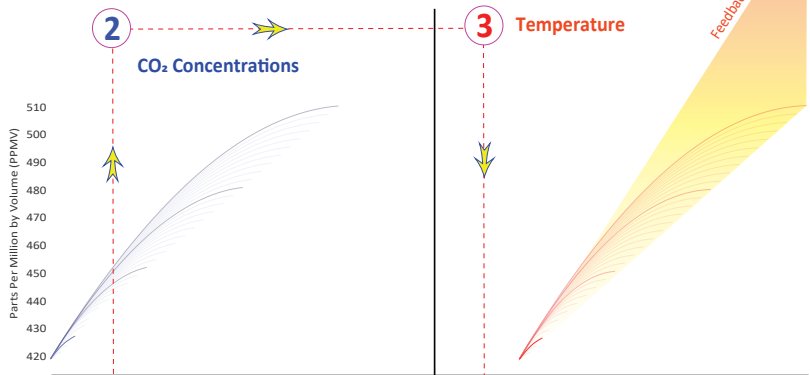
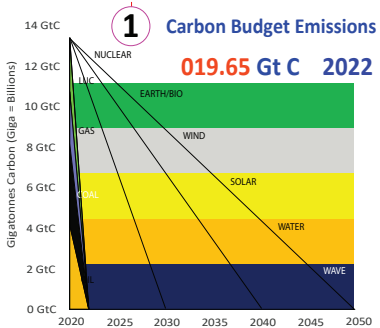
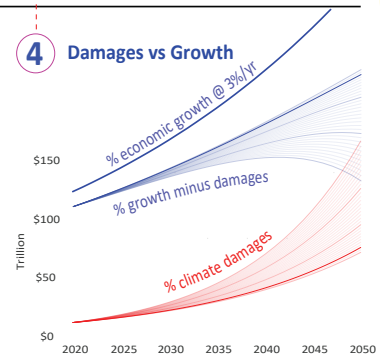
1 cause → knock-on effects 2 3 4







Feedbacks

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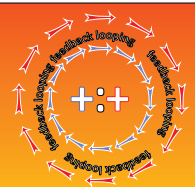

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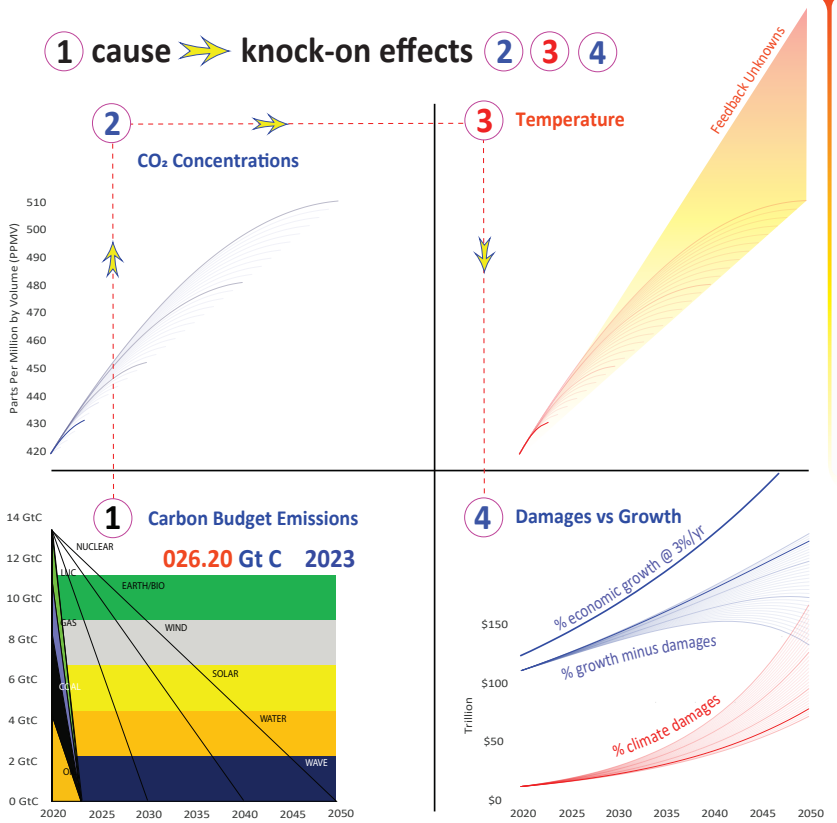
1 cause → knock-on effects 2 3 4



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Excluded / Included

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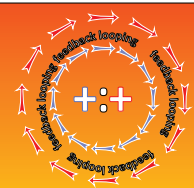
Positive Feedbacks control Rise of PPMV & T°



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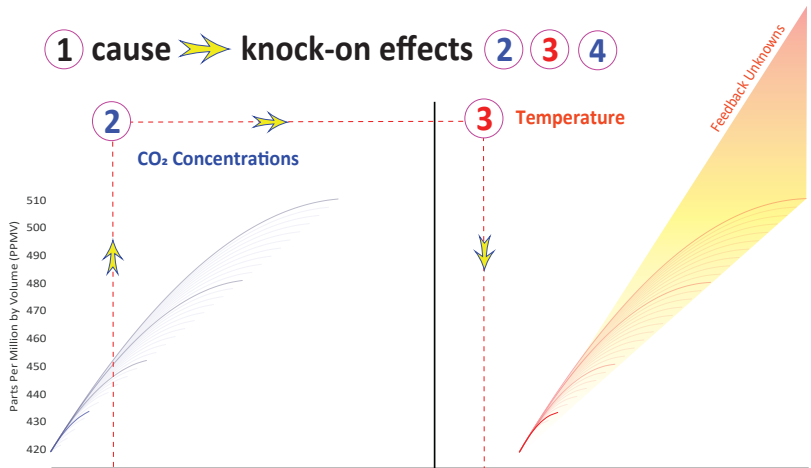
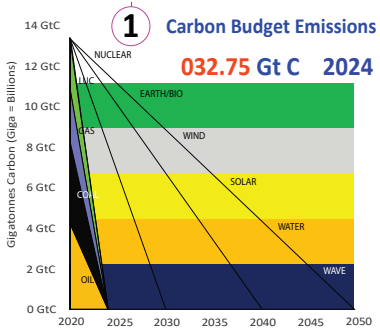
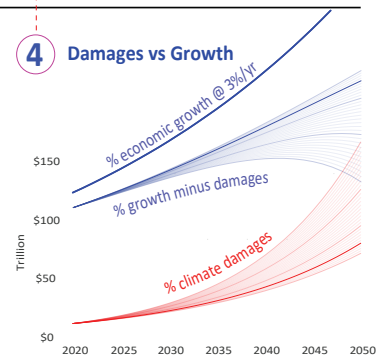
1 cause → knock-on effects 2 3 4







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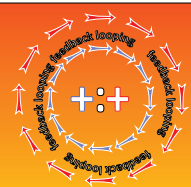

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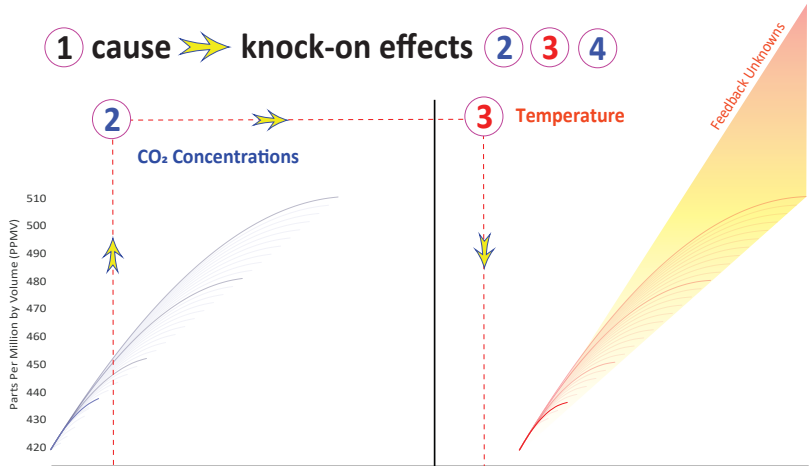

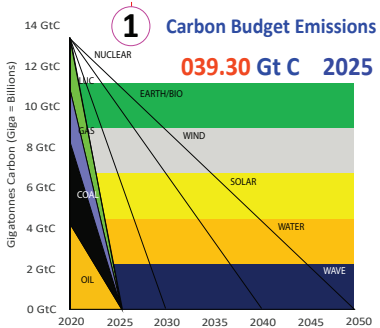

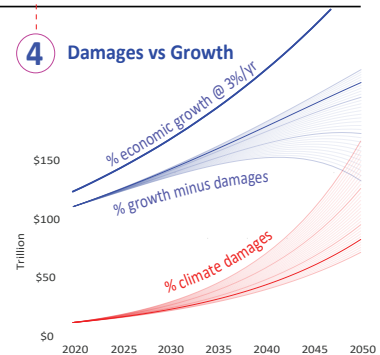

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2.813	3.313	5.625	3.313	2.513			2049	
2.750	3.250	5.500	3.250	2.450			2048	
2.688	3.188	5.375	3.188	2.388			2047	
2.625	3.125	5.250	3.125	2.325			2046	
2.563	3.063	5.125	3.063	2.263			2045	
2.500	**3.000**	**5.000**	**3.000**	**2.200**			2044	
2.438	2.938	4.875	2.938	2.138			2043	
2.375	2.875	4.750	2.875	2.075			2042	
2.313	2.813	4.625	2.813	2.013			2041	
2.250	2.750	4.500	2.750	1.950			2040	
2.188	2.688	4.375	2.688	1.888			2039	
2.125	2.625	4.250	2.625	1.825			2038	
2.063	2.563	4.125	2.563	1.763			2037	
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050		2036	Limiting T° rise to >2.0° C
1.938	2.438	3.875	2.438	1.638	2048		2035	Emissions contraction to zero by 2035/40 required
1.875	2.375	3.750	2.375	1.575	2046		2034	
1.813	2.313	3.625	2.313	1.513	2044		2033	
1.750	2.250	3.500	2.250	1.450	2042		2032	
1.688	2.188	3.375	2.188	1.388	2040		2031	
1.625	2.125	3.250	2.125	1.325	2038		2030	
1.563	2.063	3.125	2.063	1.263	2036		2029	
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034		**2028**	Limiting T° rise to 1.5° C
1.438	1.938	2.875	1.938	1.138	2032		2027	Emissions contraction to zero by 2025/30 required
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030		2026	
1.313	1.813	2.625	1.813	1.013	2028		2025	
1.250	1.750	2.500	1.750	0.950	2026		2024	
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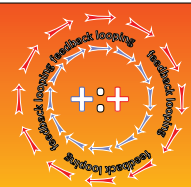
1.063	1.563	2.125	1.563	0.763	2020		2021	
1.000	**1.500**	**2.000**	**1.500**	**0.700**			2020	Global Average T° at 1.0° C in 2020 . . .



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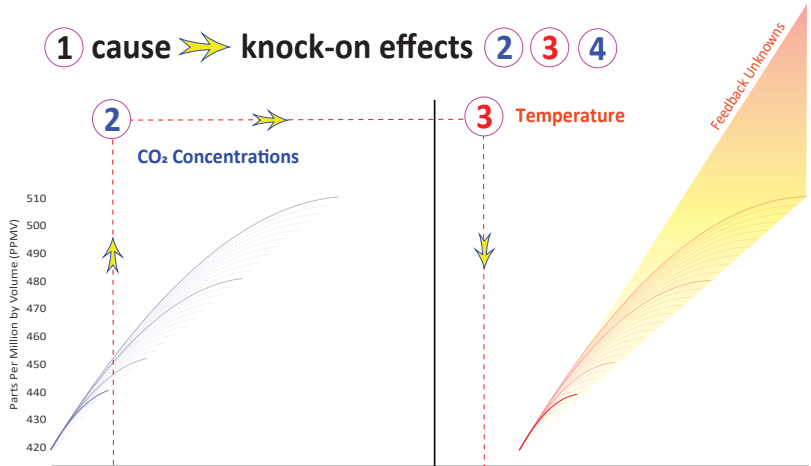
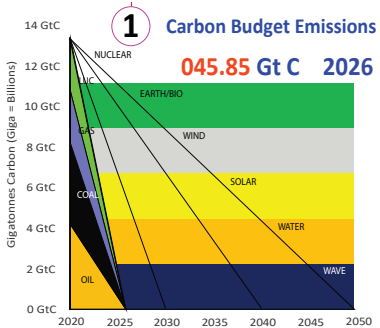
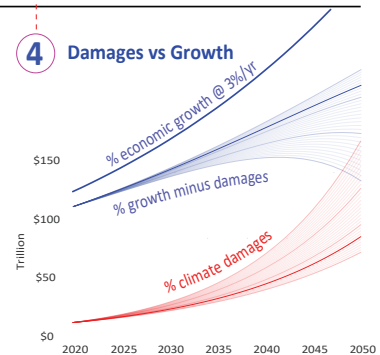
1 cause → knock-on effects 2 3 4







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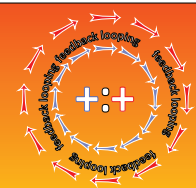
Feedbacks

Positive Feedbacks control Rise of PPMV & T°



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Global Average T° at 1.0° C in 2020 . . .

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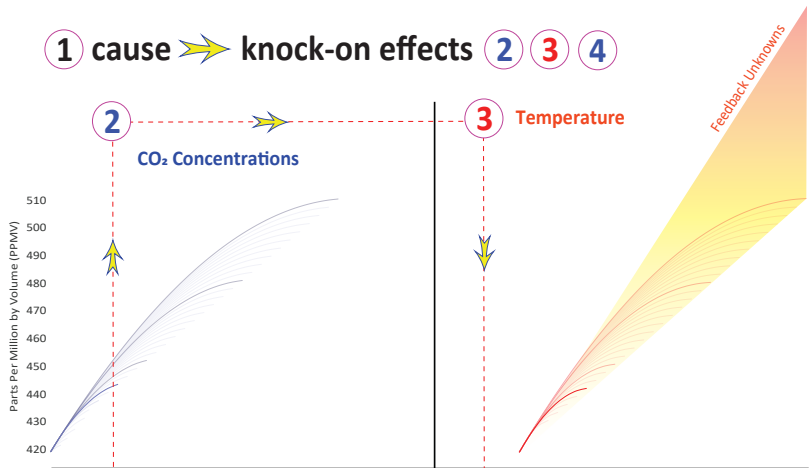
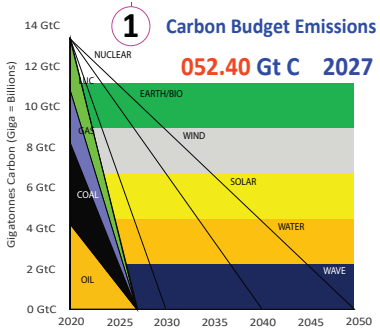
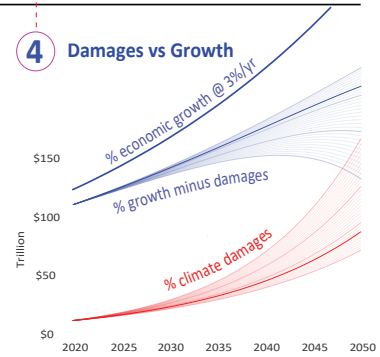
1 cause → knock-on effects 2 3 4







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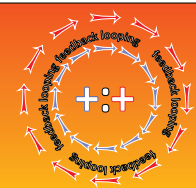
Excluded / Included

Feedbacks

Positive Feedbacks control Rise of PPMV & T°



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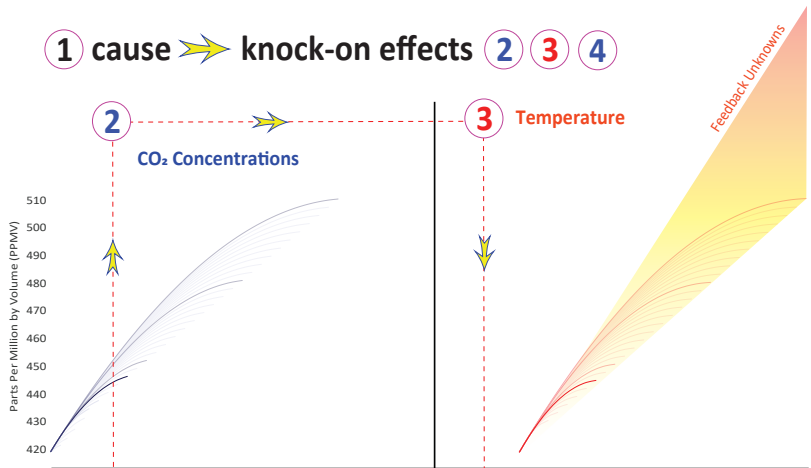
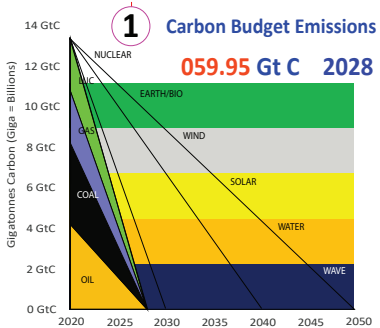
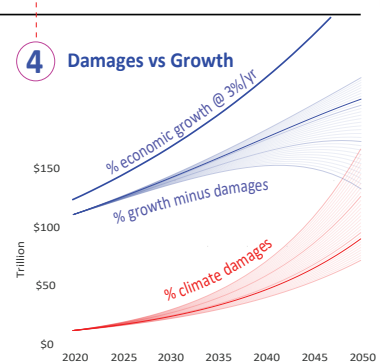
1 cause → knock-on effects 2 3 4







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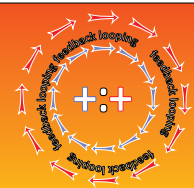

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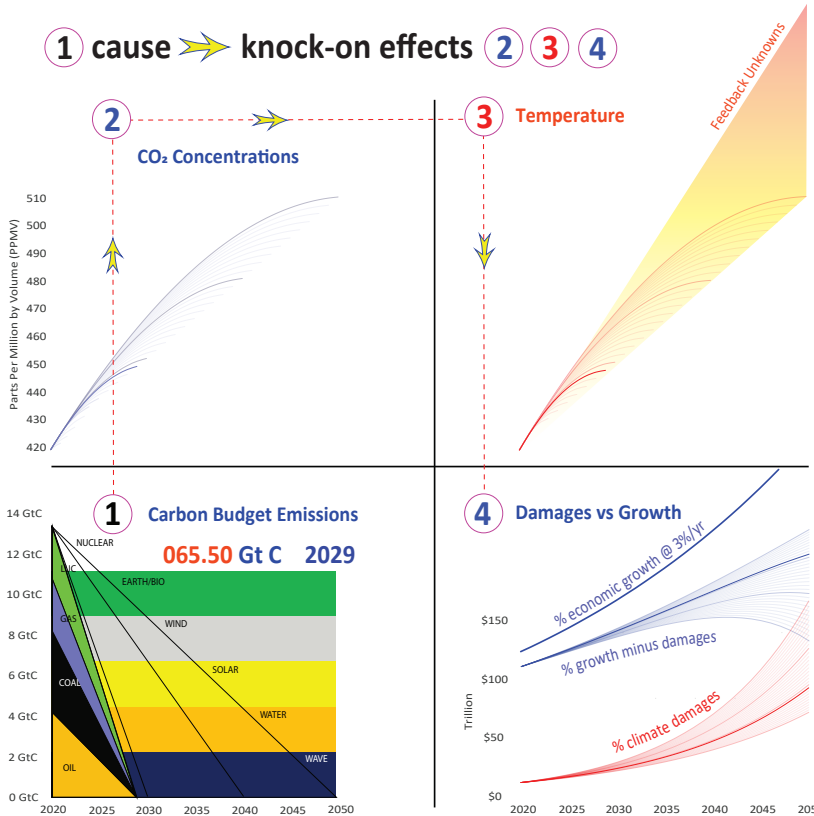

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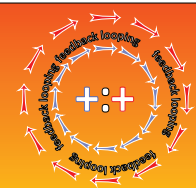

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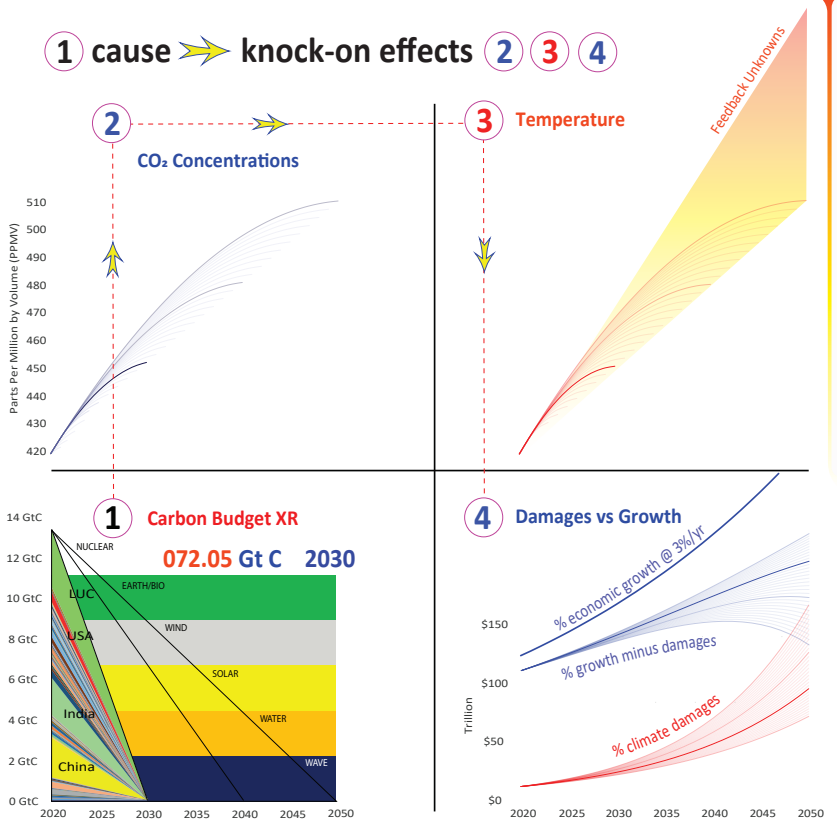

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2.313	2.813	4.625	2.813	2.013		2041
2.250	2.750	4.500	2.750	1.950		2040
2.188	2.688	4.375	2.688	1.888		2039
2.125	2.625	4.250	2.625	1.825		2038
2.063	2.563	4.125	2.563	1.763		2037
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050	2036
1.938	2.438	3.875	2.438	1.638	2048	2035
1.875	2.375	3.750	2.375	1.575	2046	2034
1.813	2.313	3.625	2.313	1.513	2044	2033
1.750	2.250	3.500	2.250	1.450	2042	2032
1.688	2.188	3.375	2.188	1.388	2040	2031
1.625	2.125	3.250	2.125	1.325	2038	2030
1.563	2.063	3.125	2.063	1.263	2036	2029
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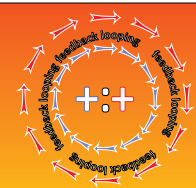
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020

Excluded / Included

Feedbacks

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C
Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C
Emissions contraction to zero by 2025/30 required

Global Average T° at 1.0° C in 2020 . . .

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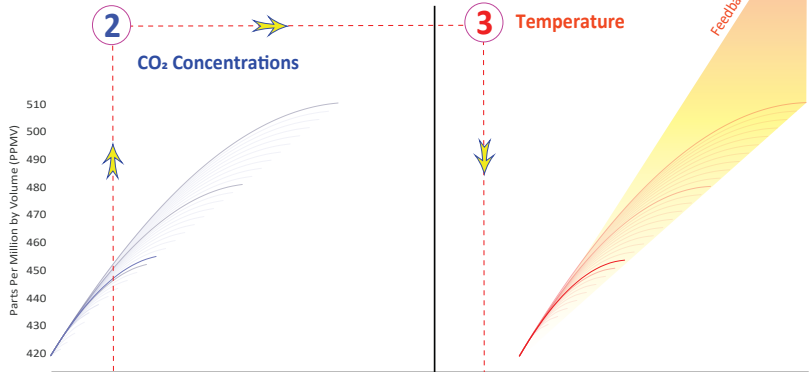
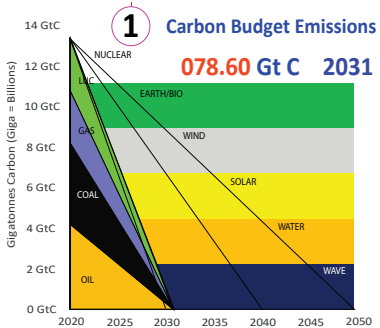
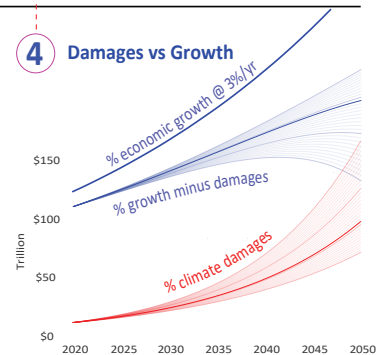
1 cause → knock-on effects 2 3 4







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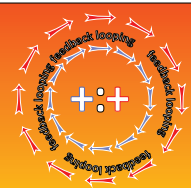

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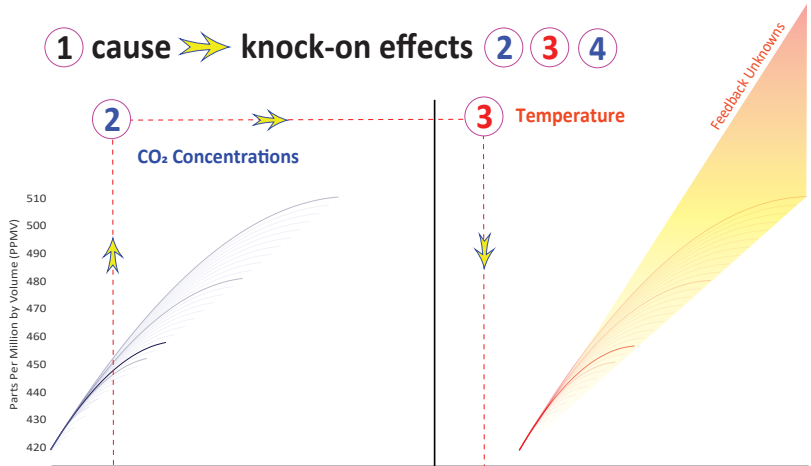

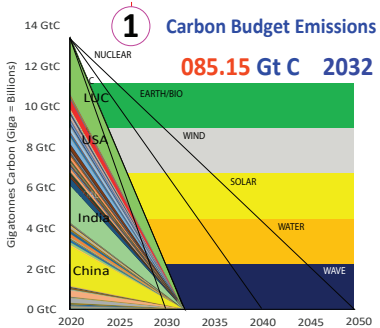

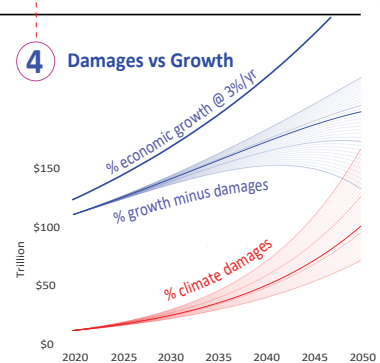

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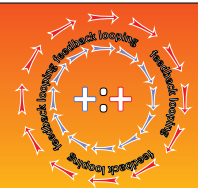

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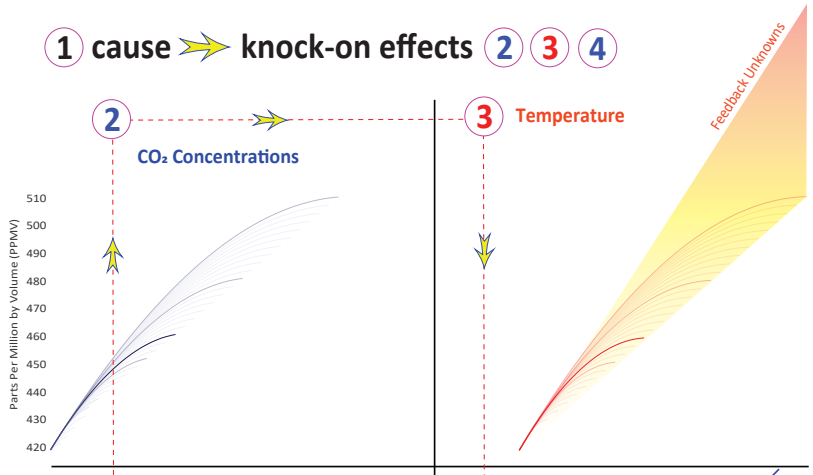

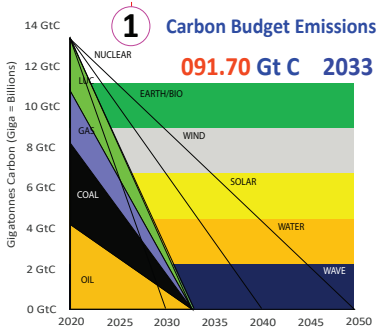

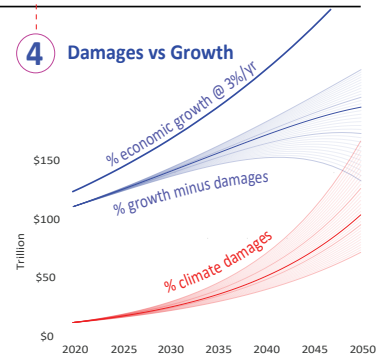

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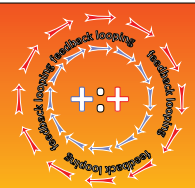

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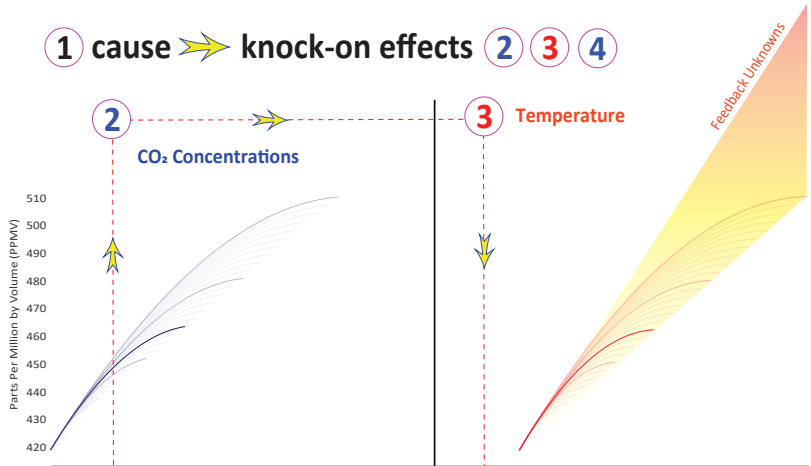

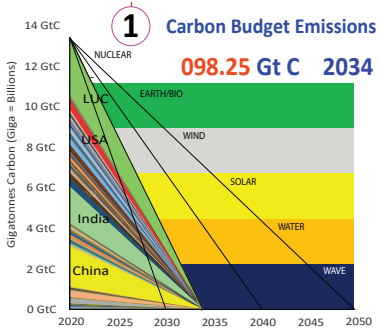

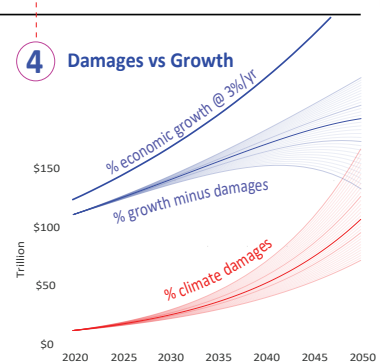

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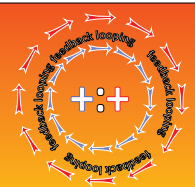

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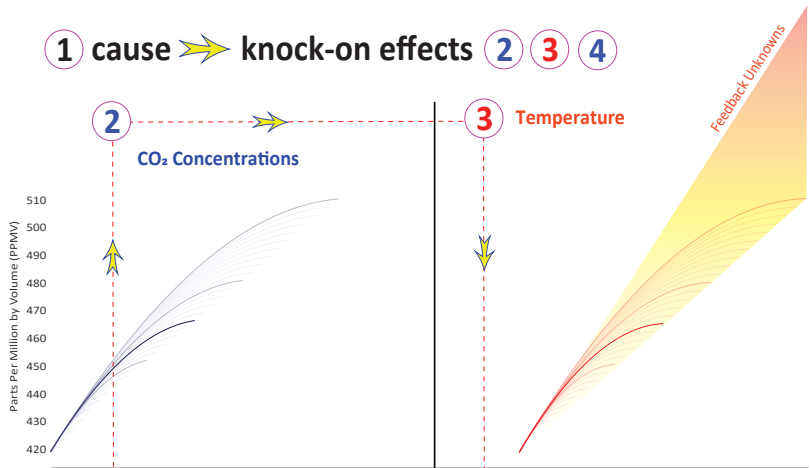

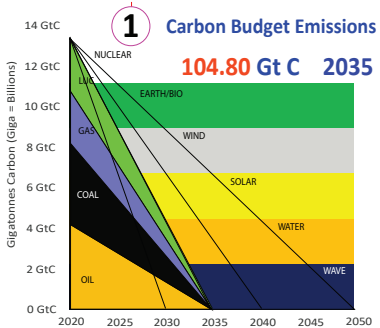

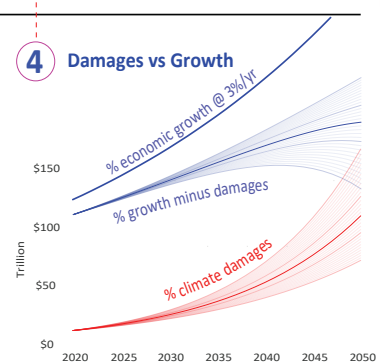

Feedbacks

Globally averaged temperature is no more than a statistical construct after-the-facts

Global Av	24-90° N	Arctic	Land	Ocean	Excluded	Included
2.875	3.375	5.750	3.375	2.575		2050
2.813	3.313	5.625	3.313	2.513		2049
2.750	3.250	5.500	3.250	2.450		2048
2.688	3.188	5.375	3.188	2.388		2047
2.625	3.125	5.250	3.125	2.325		2046
2.563	3.063	5.125	3.063	2.263		2045
2.500	**3.000**	**5.000**	**3.000**	**2.200**		2044
2.438	2.938	4.875	2.938	2.138		2043
2.375	2.875	4.750	2.875	2.075		2042
2.313	2.813	4.625	2.813	2.013		2041
2.250	2.750	4.500	2.750	1.950		2040
2.188	2.688	4.375	2.688	1.888		2039
2.125	2.625	4.250	2.625	1.825		2038
2.063	2.563	4.125	2.563	1.763		2037
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050	2036
1.938	2.438	3.875	2.438	1.638	2048	2035
1.875	2.375	3.750	2.375	1.575	2046	2034
1.813	2.313	3.625	2.313	1.513	2044	2033
1.750	2.250	3.500	2.250	1.450	2042	2032
1.688	2.188	3.375	2.188	1.388	2040	2031
1.625	2.125	3.250	2.125	1.325	2038	2030
1.563	2.063	3.125	2.063	1.263	2036	2029
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034	**2028**
1.438	1.938	2.875	1.938	1.138	2032	2027
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030	2026
1.313	1.813	2.625	1.813	1.013	2028	2025
1.250	1.750	2.500	1.750	0.950	2026	2024
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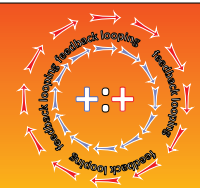
1.063	1.563	2.125	1.563	0.763	2020	2021
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C
Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C
Emissions contraction to zero by 2025/30 required

Global Average T° at 1.0° C in 2020 . . .

Rising risks in this chain of causation . . .

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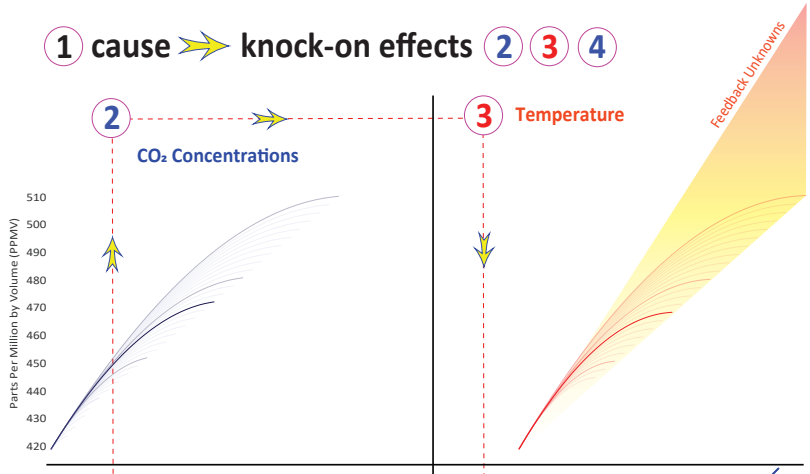
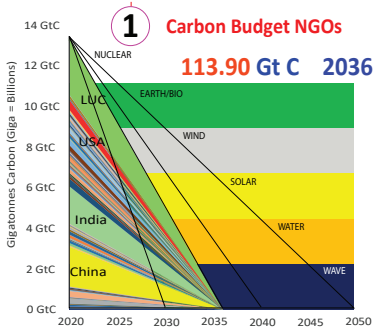
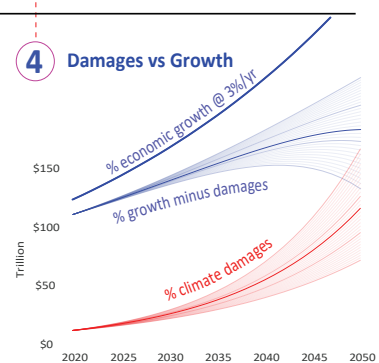
Zero emissions globally 2030-2040-2050

1 cause → knock-on effects 2 3 4







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1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034		**2028**	Limiting T° rise to 1.5° C
1.438	1.938	2.875	1.938	1.138	2032		2027	Emissions contraction to zero by 2025/30 required
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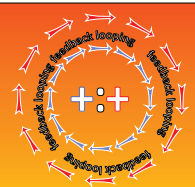

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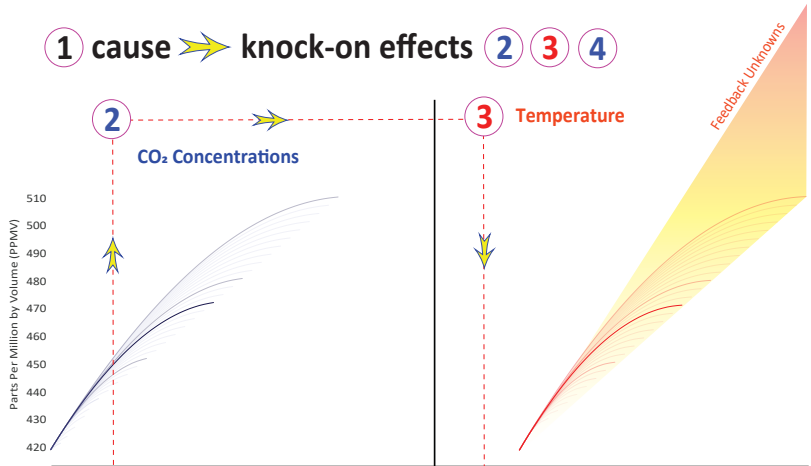

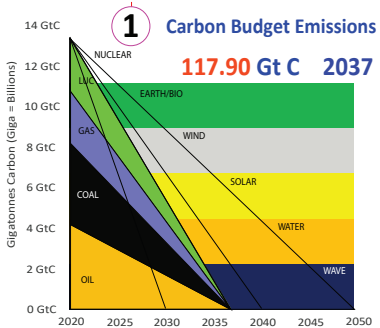

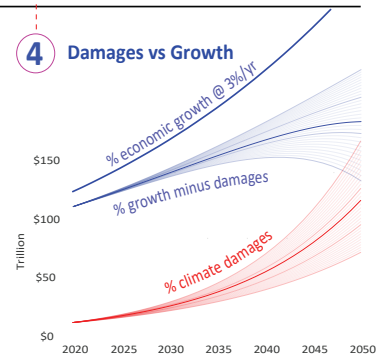

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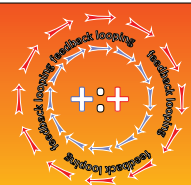

Rising risks in this chain of causation . . .

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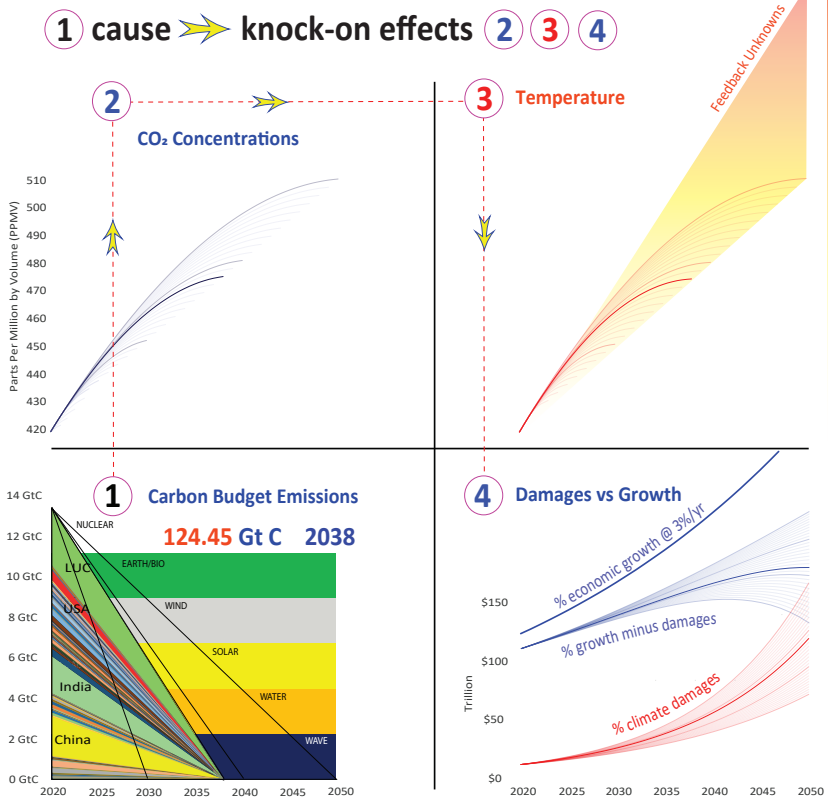

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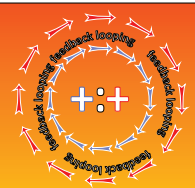

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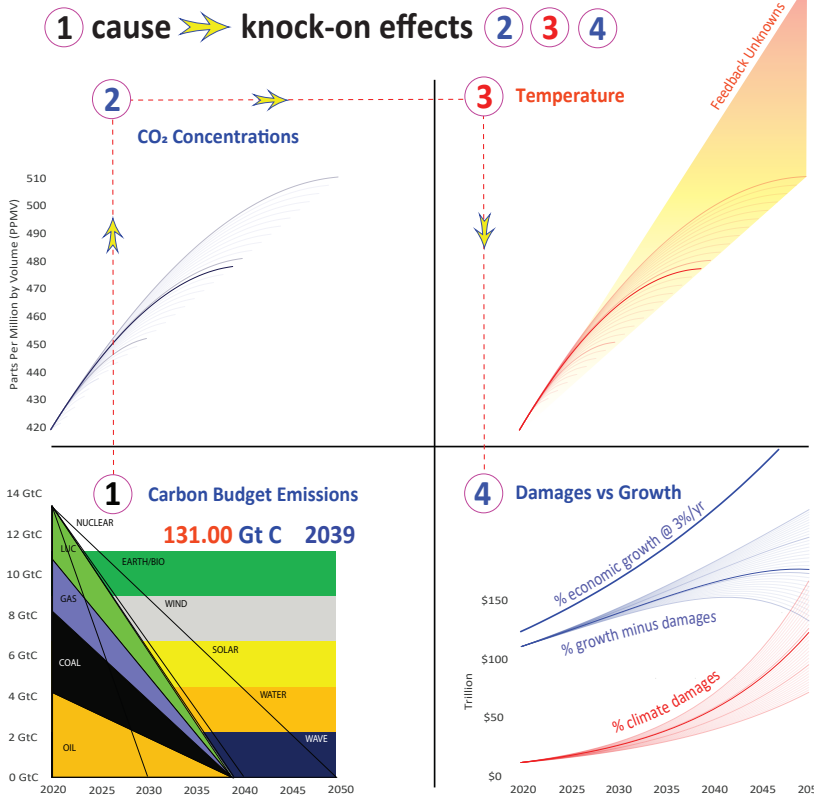

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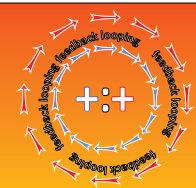
Excluded / Included

Feedbacks

Positive Feedbacks control Rise of PPMV & T°



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Global Average T° at 1.0° C in 2020 . . .

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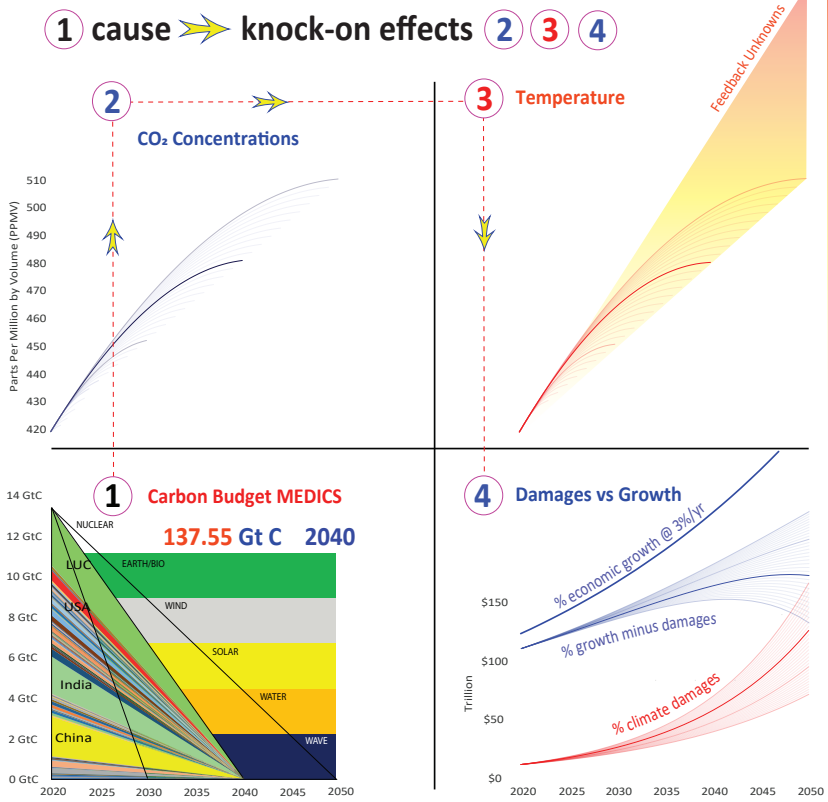

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2.625	3.125	5.250	3.125	2.325		2046
2.563	3.063	5.125	3.063	2.263		2045
2.500	**3.000**	**5.000**	**3.000**	**2.200**		2044
2.438	2.938	4.875	2.938	2.138		2043
2.375	2.875	4.750	2.875	2.075		2042
2.313	2.813	4.625	2.813	2.013		2041
2.250	2.750	4.500	2.750	1.950		2040
2.188	2.688	4.375	2.688	1.888		2039
2.125	2.625	4.250	2.625	1.825		2038
2.063	2.563	4.125	2.563	1.763		2037
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050	2036
1.938	2.438	3.875	2.438	1.638	2048	2035
1.875	2.375	3.750	2.375	1.575	2046	2034
1.813	2.313	3.625	2.313	1.513	2044	2033
1.750	2.250	3.500	2.250	1.450	2042	2032
1.688	2.188	3.375	2.188	1.388	2040	2031
1.625	2.125	3.250	2.125	1.325	2038	2030
1.563	2.063	3.125	2.063	1.263	2036	2029
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034	**2028**
1.438	1.938	2.875	1.938	1.138	2032	2027
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030	2026
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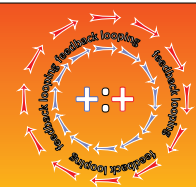
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020

Feedbacks

Excluded / Included

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C

Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C

Emissions contraction to zero by 2025/30 required

Global Average T° at 1.0° C in 2020 . . .

Rising risks in this chain of causation . . .

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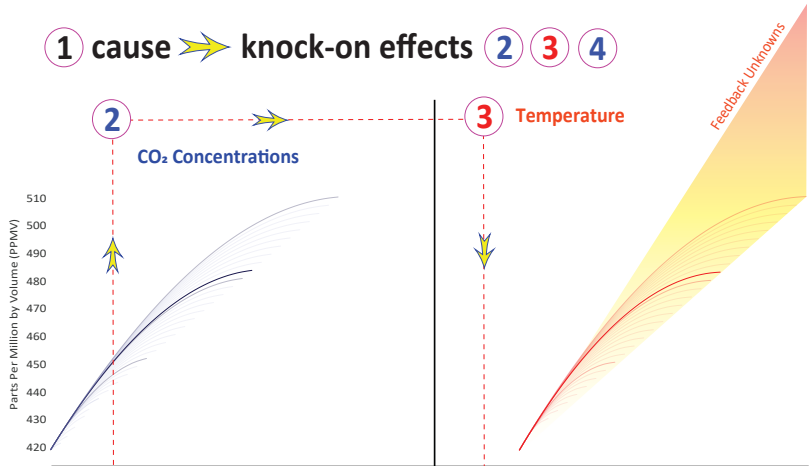
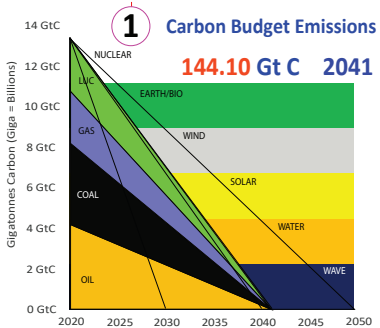
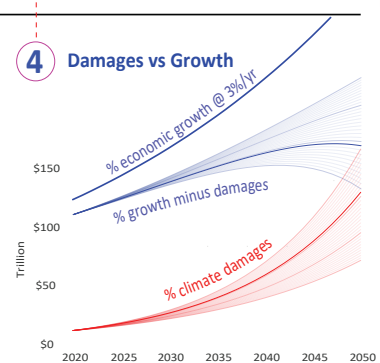
Zero emissions globally 2030-2040-2050

1 cause → knock-on effects 2 3 4







Globally averaged temperature is no more than a statistical construct after-the-facts

Global Av	24-90° N	Arctic	Land	Ocean	Excluded	Included		Feedbacks
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1.938	2.438	3.875	2.438	1.638	2048		2035	Emissions contraction to zero by 2035/40 required
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1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034		2028	Limiting T° rise to 1.5° C
1.438	1.938	2.875	1.938	1.138	2032		2027	Emissions contraction to zero by 2025/30 required
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030		2026	
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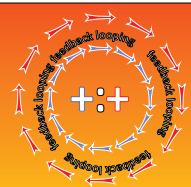
1.000	**1.500**	**2.000**	**1.500**	**0.700**	2020		2020	Global Average T° at 1.0° C in 2020 . . .



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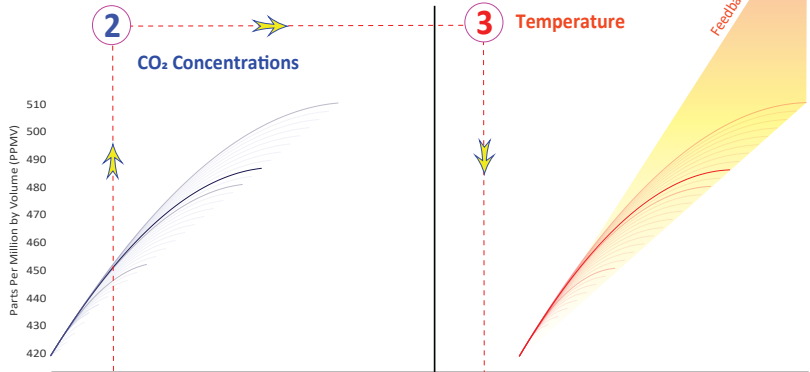
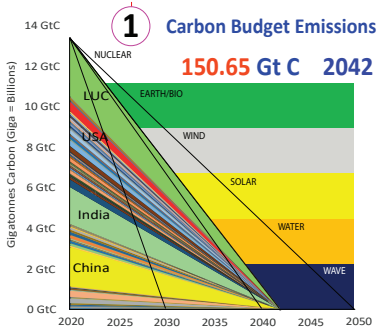
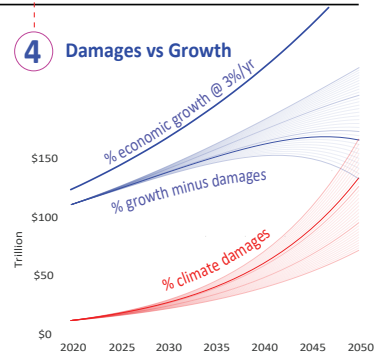
1 cause → knock-on effects 2 3 4







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Global Av	24-90° N	Arctic	Land	Ocean	Excluded	Included		Feedbacks
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1.563	2.063	3.125	2.063	1.263	2036		2029	
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034		**2028**	Limiting T° rise to 1.5° C
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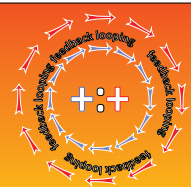
1.000	**1.500**	**2.000**	**1.500**	**0.700**	2020		2020	Global Average T° at 1.0° C in 2020 . . .



Rising risks in this chain of causation . . .

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Excluded / Included

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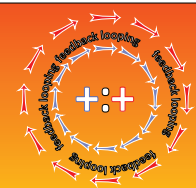
Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C

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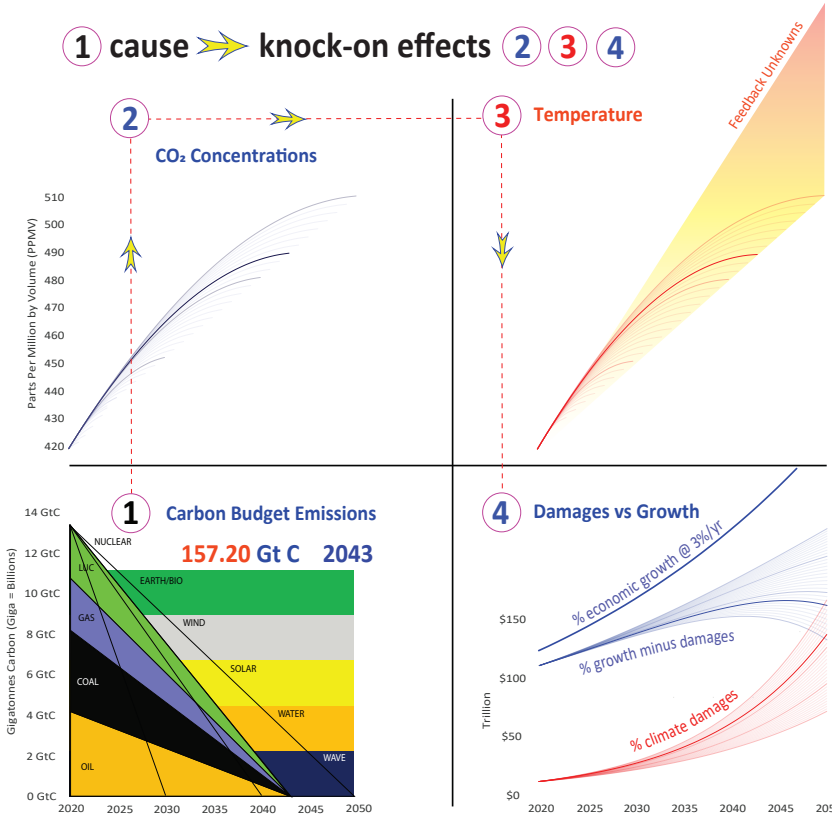
Global Average T° at 1.0° C in 2020 . . .

1 cause → knock-on effects 2 3 4



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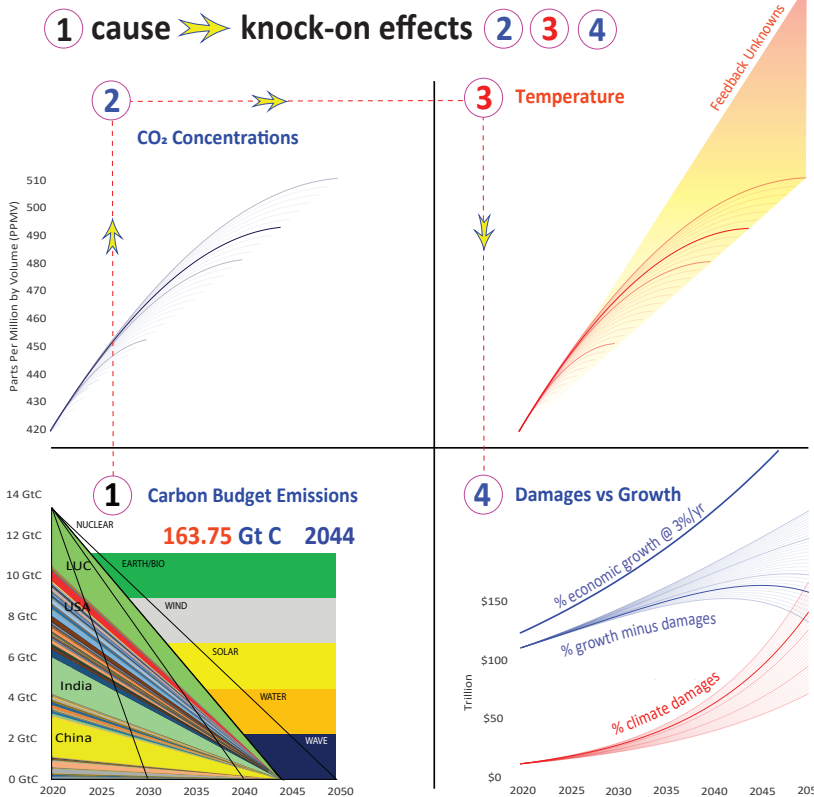

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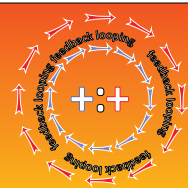

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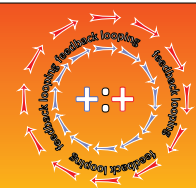
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030	2026
1.313	1.813	2.625	1.813	1.013	2028	2025
1.250	1.750	2.500	1.750	0.950	2026	2024
1.188	1.688	2.375	1.688	0.888	2024	2023
1.125	1.625	2.250	1.625	0.825	2022	2022
1.063	1.563	2.125	1.563	0.763	2020	2021
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020

Globally averaged temperature is no more than a statistical construct after-the-facts

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C

Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C

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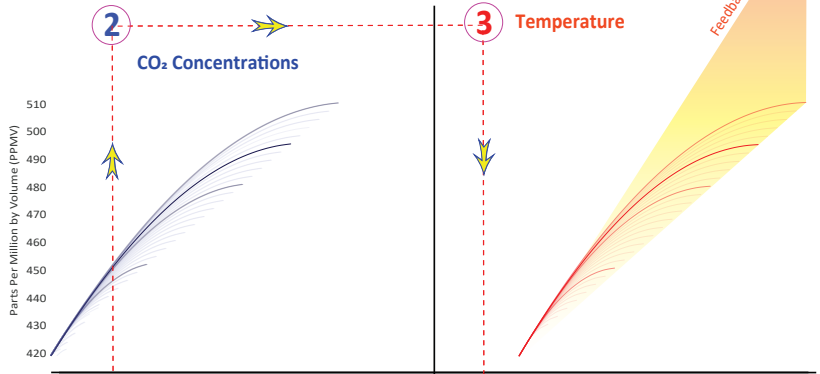
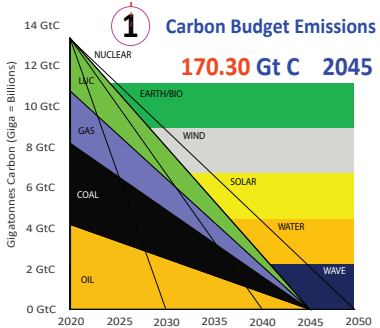
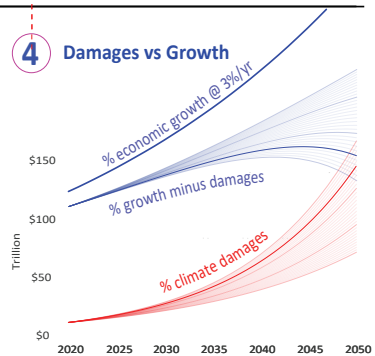
Global Average T° at 1.0° C in 2020 . . .

1 cause → knock-on effects 2 3 4







Rising risks in this chain of causation . . .

1. Budget - Weight; Contraction-Rate; Zero-Date (needs to be 2030-2040)
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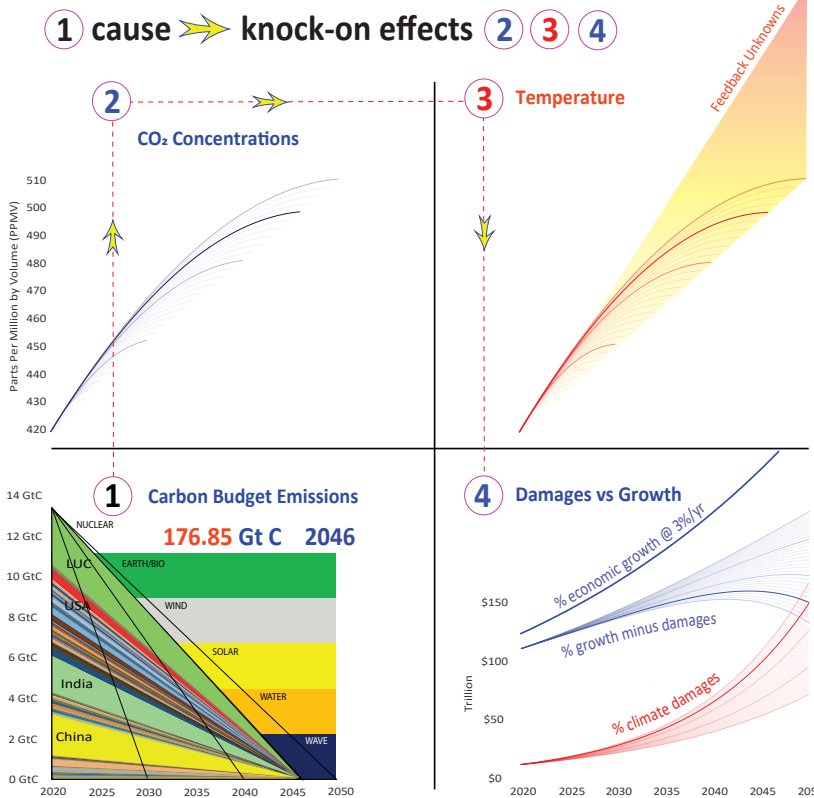

Globally averaged temperature is no more than a statistical construct after-the-facts

Global Av	24-90° N	Arctic	Land	Ocean	Excluded / Included		Feedbacks
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2.813	3.313	5.625	3.313	2.513		2049	
2.750	3.250	5.500	3.250	2.450		2048	
2.688	3.188	5.375	3.188	2.388		2047	
2.625	3.125	5.250	3.125	2.325		2046	
2.563	3.063	5.125	3.063	2.263		2045	
2.500	**3.000**	**5.000**	**3.000**	**2.200**		2044	
2.438	2.938	4.875	2.938	2.138		2043	
2.375	2.875	4.750	2.875	2.075		2042	
2.313	2.813	4.625	2.813	2.013		2041	
2.250	2.750	4.500	2.750	1.950		2040	
2.188	2.688	4.375	2.688	1.888		2039	
2.125	2.625	4.250	2.625	1.825		2038	
2.063	2.563	4.125	2.563	1.763		2037	
2.000	**2.500**	**4.000**	**2.500**	**1.700**	2050	2036	Limiting T° rise to >2.0° C
1.938	2.438	3.875	2.438	1.638	2048	2035	Emissions contraction to zero by 2035/40 required
1.875	2.375	3.750	2.375	1.575	2046	2034	
1.813	2.313	3.625	2.313	1.513	2044	2033	
1.750	2.250	3.500	2.250	1.450	2042	2032	
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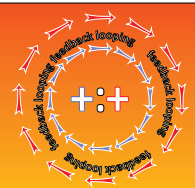
1.625	2.125	3.250	2.125	1.325	2038	2030	
1.563	2.063	3.125	2.063	1.263	2036	2029	
1.500	**2.000**	**3.000**	**2.000**	**1.200**	2034	**2028**	Limiting T° rise to 1.5° C
1.438	1.938	2.875	1.938	1.138	2032	2027	Emissions contraction to zero by 2025/30 required
1.375	**1.875**	**2.750**	**1.875**	**1.075**	2030	2026	
1.313	1.813	2.625	1.813	1.013	2028	2025	
1.250	1.750	2.500	1.750	0.950	2026	2024	
1.188	1.688	2.375	1.688	0.888	2025	2023	
1.125	1.625	2.250	1.625	0.825	2022	2022	
1.063	1.563	2.125	1.563	0.763	2020	2021	
1.000	**1.500**	**2.000**	**1.500**	**0.700**		2020	Global Average T° at 1.0° C in 2020 . . .



Rising risks in this chain of causation . . .

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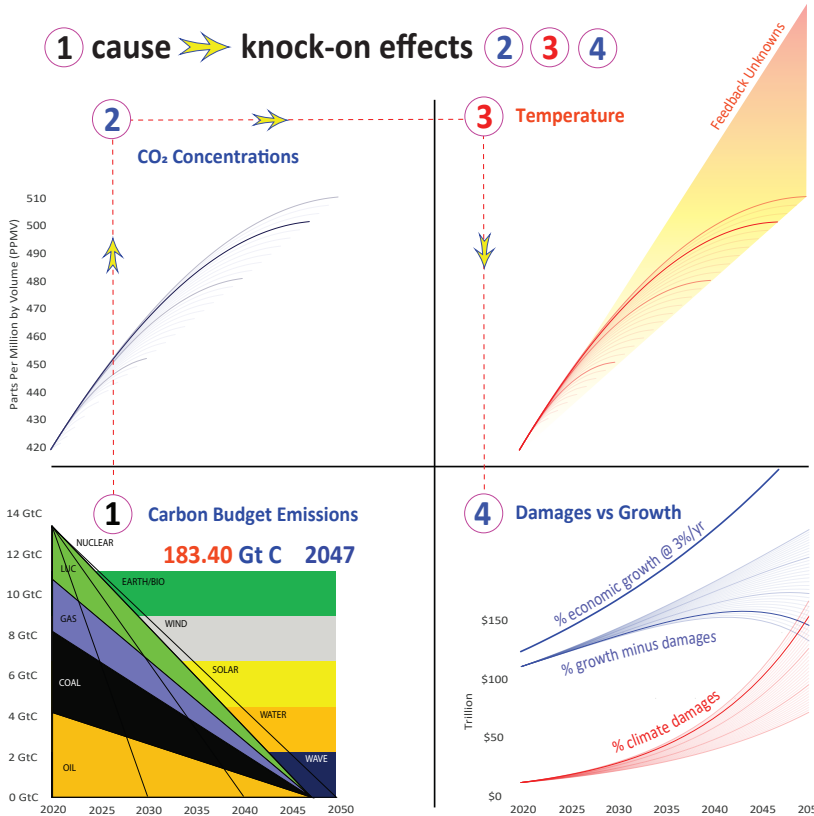
Zero emissions globally 2030-2040-2050

1 cause → knock-on effects 2 3 4



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Global Av	24-90° N	Arctic	Land	Ocean	Excluded	Included
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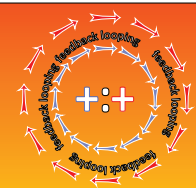
Feedbacks

Positive Feedbacks control Rise of PPMV & T°



Limiting T° rise to >2.0° C
Emissions contraction to zero by 2035/40 required

Limiting T° rise to 1.5° C
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Global Average T° at 1.0° C in 2020 . . .

Rising risks in this chain of causation . . .

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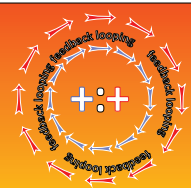

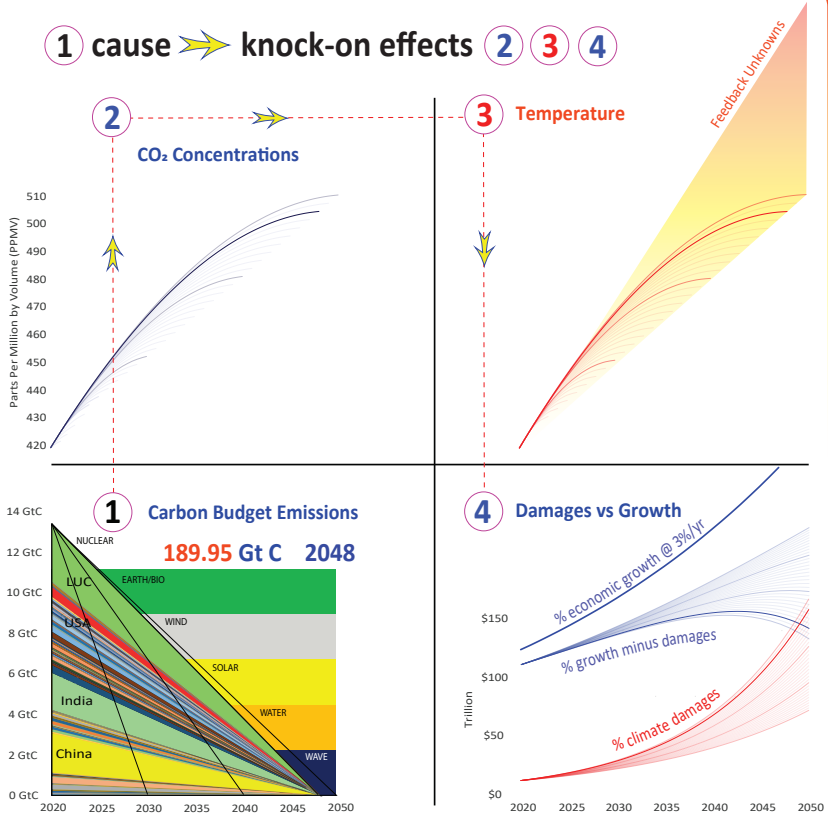

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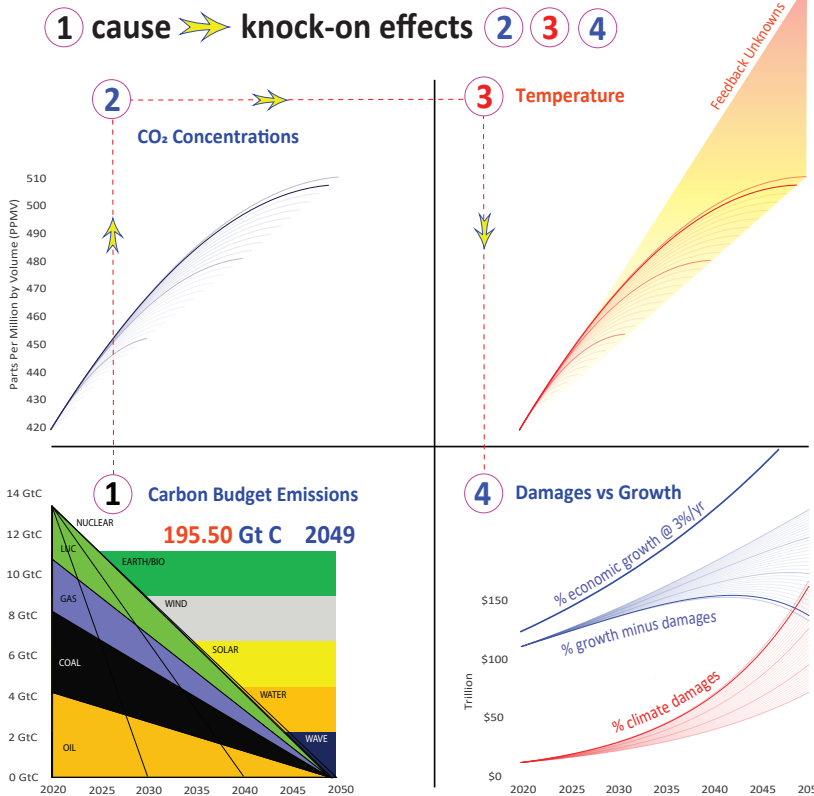

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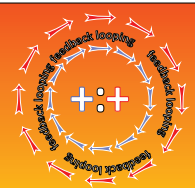

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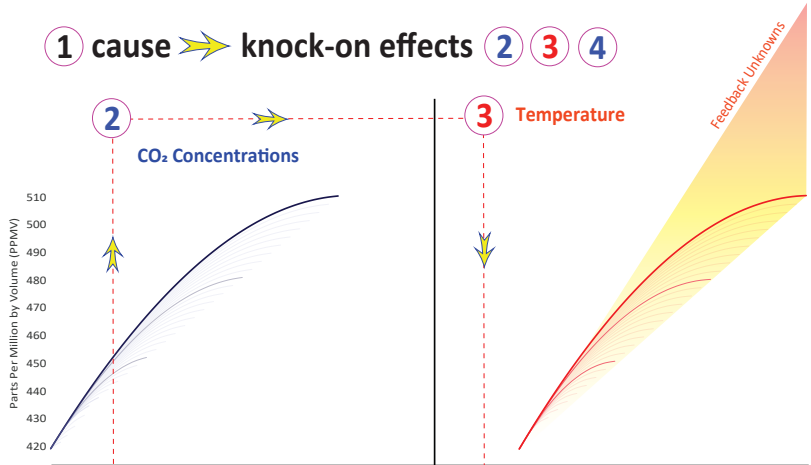
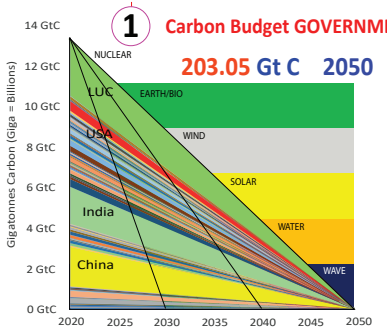
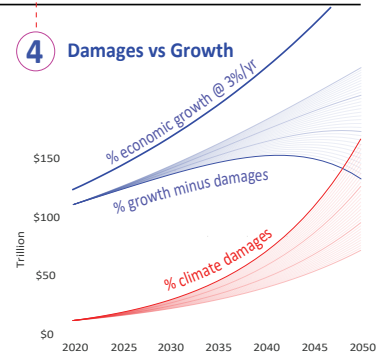
1 cause → knock-on effects 2 3 4







Rising risks in this chain of causation . . .

1. Budget - Weight; Contraction-Rate; Zero-Date (needs to be 2030-2040)
2. CO_2 Concentrations - Accumulates Increasing Fraction of Budget
3. Rising Temperature Response to Rising PPMV & Rising Risks without/with Feedback
4. Damages vs Growth Minus Damages - Insured+Uninsured Losses starts @ 6%/annum

2020 temperatures from GISS http://www.gci.org.uk/images/Temperature_Unmasked.png

More information re animation http://www.gci.org.uk/Sliding_Scale.html