

Supplementary Information: Detailed SDG Push scenario interventions

The following table includes the parametric scenario interventions made in IFs for the SDG Push scenario. The first column describes the scenario intervention in general terms, the second column describes the specific parametric intervention applied in IFs, and the third column describes the geography or country grouping to which the intervention is applied. Unless otherwise specified, all parametric interventions begin in 2024.

Table S1. Detailed interventions for the SDG Push scenario.

Description	Parametric intervention	Geography
Reduced agricultural losses in all stages of production, transport, and consumption.	<i>aglossconsm</i> , <i>aglossprodm</i> , and <i>aglosstransm</i> are interpolated from 1 to 0.7 over 30 years.	World
Carbon tax is introduced at USD 200 per ton for OECD countries.	<i>carbtax</i> interpolated from 0 to 200 over 13 years.	OECD countries
Carbon tax is introduced at USD 50 per ton for non-OECD countries.	<i>carbtax</i> interpolated from 0 to 50 over 13 years.	Non-OECD countries
Reduced caloric demand for meat products.	<i>clpcm</i> for meat interpolated from 1 to 0.8 over 30 years.	World
Increased caloric demand for crops.	<i>clpcm</i> for crop interpolated from 1 to 1.11 over 13 years.	World
Increased availability and use of modern cookstoves.	<i>cookstovesadd</i> for improved increased from 0 to 500 over 13 years.	World
Increased government participation as defined by the Polity project index.	<i>democm</i> increased from 1 to 1.3 over 13 years.	World
Increased rates of tertiary graduates with science and engineering degrees.	<i>edterscienshradd</i> increased from 1 to 10 over 13 years.	World
Energy demand falls for OECD countries.	<i>endemm</i> decreased from 1 to 0.7 over 16 years.	OECD countries
Energy demand falls gradually for non-OECD countries.	<i>endemm</i> decreased from 1 to 0.64 over 76 years.	Non-OECD countries
Energy demand to GDP ratio increases.	<i>enrgdpgr</i> increases from -1.38 to -1.13 over 76 years.	World
Reduction in residential PM2.5 levels.	<i>envpm2pt5m</i> decreased from 1 to 0.7 over 36 years.	World
Reduction in the annual rate of energy production cost reduction for coal.	<i>etechadv</i> for coal decreased from 0.004 to 0.002 in one year.	World

Acceleration of the annual rate of energy production cost reduction for renewable energy.	<i>etechadv</i> for OthRenew increased from 0.008 to 0.01 over one year.	World
Reduction in fish catch for countries currently catching more than 2mmt of fish per year.	<i>fishcatchm</i> decreased from 1 to 0.75 over 50 years.	China, Indonesia, Japan, Myanmar, Peru, Russian Federation, Thailand, and United States
Increase in forested land area.	<i>forestm</i> increased from 1 to 1.0015 over 1 year.	World
Increased government spending on health.	<i>gdsm</i> for health increased from 1 to 2 over 13 years.	World
Increased government spending on education.	<i>gdsm</i> for education increased from 1 to 2 over 13 years.	World
Increased government spending on research and development.	<i>gdsm</i> for R&D increased from 1 to 2 over 13 years.	World
Increased government spending on infrastructure.	<i>gdsm</i> for infrastructure increased from 1 to 2 over 13 years.	World
Improved government effectiveness.	<i>goveffectm</i> increased from 1 to 1.3 over 13 years.	World
Increased government welfare transfers to unskilled households.	<i>govhhtrnwelm</i> for 1 unskilled increased from 1 to 1.5 over 13 years.	World
Increased government welfare transfers to unskilled households.	<i>govhhtrnwelm</i> for 1 unskilled increased from 1 to 2 over 13 years.	Low-income economies
Increased access to broadband.	<i>ictbroadm</i> increased from 1 to 1.5 over 20 years.	World
Increased access to mobile broadband.	<i>ictbroadmobilm</i> increased from 1 to 1.5 over 20 years.	World
Reduced electricity transmission loss.	<i>infraelectranlossm</i> decreased from 1 to 0.8 over 30 years.	World
Improved calorie allocation to those most in need.	<i>malelimprecisesw</i> switched from 0 to 1 in one year.	World
Increased spending on research and development.	<i>randdexpm</i> increased from 1 to 1.2	World
Increased access to improved sanitation.	<i>sanitationm</i> for improved increased from 1 to 2 over 30 years.	World
Reduced water demand.	<i>waterdemandm</i> decreased from 1 to 0.7 over 33 years.	World

Increased access to improved water.	<i>watsafem</i> for piped increased from 1 to 2 over 30 years.	World
Increased crop yields.	<i>ylm</i> for upper-middle- and high-income economies increased from 1 to 1.2 over 14 years.	High-income economies and upper-middle-income economies
Increased crop yields.	<i>ylm</i> for lower-middle-income economies increased from 1 to 1.5 over 50 years.	Lower-middle-income economies
Increased crop yields.	<i>ylm</i> for low-income economies increased from 1 to 2 over 50 years.	Low-income economies
More equitable distribution of calories.	<i>clpccvm</i> decreased from 1 to 0.85 over 15 years.	World
Decreased capital costs-to-output ratio for renewable energy.	<i>qem</i> for OthRenew decreased from 1 to 0.5 over 15 years.	World
Decreased capital costs-to-output ratio for coal.	<i>qem</i> for coal increased from 1 to 1.25 over 15 years.	World
Increased electricity access.	<i>infraelecacm</i> increased from 1 to 1.5 over 24 years.	World
Increased tertiary graduation rates.	<i>edtergradm</i> increased from 1 to 1.5 over 24 years.	World
Accelerated growth in lower-secondary graduation rates.	<i>edseclovrgradgr</i> increased from 0 to 2.5 over one year.	World
Increased contraception use.	<i>contrusm</i> increased from 1 to 1.15 over 25 years.	World