Central Water Commission
Water System Engineer
Bhagirath (English) & Publicity Section
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West Block II, wing No- 5
R K Puram, New Delhi-66
Dated 9.10.2018

Subject: Submission of News Clippings

The News Clippings on Water Resources Development and allied subjects are enclosed for perusal of the Chairman, CWC, and Member (WP&P/D&R/RM), Central Water Commission, the soft copies of clippings have also been uploaded on the CWC website.

S. Mehrm 9/10/2018
SPA (Publicity)

Encl: As stated above.

Deputy Director, WSE Dte. 09/10/18

Director, WSE Dte. 09/10

For information of Chairman & Member (WP&P/D&R/R.M.), CWC and all concerned, uploaded at www.cwc.nic.in

O/C

News item/letter/article/editorial published on 09.10.2018 in the

Hindustan Times
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The Times of India (A)
Business standard ✓
THE ECONMIC TIMES

and documented at Bhagirath(English)& Publicity Section, CWC.

BS-9

GLOBAL WARMING REPORT

IPCC has served us a final warning on climate: CSE

'India to be highly impacted; US biggest obstacle to forming a global coalition'

PRESS TRUST OF INDIA
New Delhi, 8 October

India and other highly-populated countries, which depend on agriculture and fisheries, will be dented due to rise in sea levels as it will cause more droughts, floods and heatwaves.

This has been predicted by the Intergovernmental Panel for Climate Change's (IPCC's) report, an environmental think-tank said on Monday.

Reacting to the latest report from the IPCC, the Centre for Science and Environment said the impact of 1.5°C warming is greater than what was anticipated earlier while the repercussions at 2°C are "catastrophic" for the poor and for developing nations like India. Avoiding global climate chaos will require a major transformation of society and the world economy that is "unprecedented in scale," the IPCC said in a landmark report that warns time is running out to avert a disaster.

At current levels of greenhouse gas emissions, the 1.5 C marker can be breached as early as 2030 and no later than mid-century, the UN's IPCC reported with "high confidence".

The US is the "biggest" obstacle to forming a global coalition to fight climate change and the world needs to unite against the "obstructive approach" of the US, the CSE said, while asserting that Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC) cannot be the only way ahead to address the climate change.

"The world needs a 'Plan B' to address climate change. India must take the lead in forming a global coalition for a 1.5°C world to save its poor and vulnerable population," the CSE said. "Even at a little over 1.0°C warming, India is being battered by the worst climate extremes — it is clear that the situation at 1.5°C is going to worsen. The new report from IPCC has served us a final warning that we must get our act together — now and quickly," said Sunita Narain, Director General, CSE.

CSE Deputy Director General Chandra Bhushan said the report makes it clear that the impact of 1.5°C warming is greater than what was anticipated earlier.

"The goal of climate change now must be firmly fixed to 1.5°C to give the communities and nations a fighting chance to avoid the worst impacts of climate change. India must take the lead in creating a global coalition in this endeavour," Bhushan said.

TURNING UP THE HEAT

- Impact of 1.5°C warming is greater than what was anticipated earlier while the repercussions at 2°C are 'catastrophic' for the poor and developing nations like India
- Paris Agreement and the UN Framework Convention on Climate Change cannot be the only way ahead to address climate change, Centre for Science and Environment (CSE) said
- India, with large population, which are dependent on the agricultural and fishery sectors, will be highly impacted, the IPCC report said
- India must take the lead in forming a global coalition in tackling worst impacts of climate change, CSE said

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IIT develops technique to harvest water from fog

ST-9

STATESMAN NEWS SERVICE
SHIMLA, 8 OCTOBER

Taking a cue from mother nature to meet the demand for water, scientists at Indian Institute of Technology Mandi (IIT) have come-up with nature-inspired material that can harvest water from fog.

The researchers have designed water harvesting surfaces based on the surface structure of the leaves of an ornamental plant called the Dragon's lily head (Gladiolus *dalenii*).

A research team lead Dr Venkata Krishnan, Associate Professor of Chemistry at the School of Basic Sciences, IIT Mandi, studied the intricate structures on the body of plants that capture water from air and mimics them to build materials that can harvest water.

Krishan said he decided to take a leaf out of nature's book to develop sustainable water harvesting technologies as there are several plants in arid and semi-arid regions of the world whose leaves can harvest water from dew and fog.

Many animals and plants reap water from the air in interesting ways as darkling beetles of the Namib Desert of Africa Namib Bushman grass, Bermuda grass and various species of cacti are makes use of fog to convert it into fresh water.

Krishnan and his team have found that three dimensional hierarchical structures on the plant body help in water harvesting, much like the ridges and bumps on the body of the beetles.

The team at IIT Mandi has studied the mechanism by which Bermuda grass harvests water from fog.

The researchers have discovered two interesting structural traits – well-arranged conical spines with sharp edges, in which the deposition of fog droplets occurs and hierarchically organized seed heads that have flattened surfaces with gradient grooves, which transport the coalesced water droplets in a particular direction.

"The gradient of the Laplace pressure and fibre-like hanging phenomenon of the droplet allow the grass to efficiently collect fog. Understanding the structural characteristics of the grass offers ideas for designing material for water harvesting," he said.

Dr Venkata Krishnan, Associate Professor (Chemistry), School of Basic Sciences, IIT Mandi. SNS

The research team has designed water harvesting surfaces based on the surface structure of the leaves of an ornamental plant called the Dragon's lily head (Gladiolus dalenii).

The surface patterns on the leaf in micrometre (10-6 m) and nanometre (10-9 m) scales were evaluated in relation to the water harvesting properties and the patterns were replicated using soft lithographic technique as before, onto a polymer material.

The team found a 23 per cent enhancement on the fog harvesting performance of the patterned samples, compared to an unpatterned control sample.

"Collaborative efforts between scientists, industry and policy makers can enable furthering of this technology to provide drinking water to some or all of the 12 per cent of the underprivileged in the country," he added.

It is worthwhile to mention here that a recent study by WaterAid, a water and sanitation non-profit organisation in London, reports that 163 million people of the 1.35 billion population of India do not have access to clean drinking water.

Solutions to provide drinking water to India's growing population must not only span policy and behavioural changes but also incorporate scientific and technological innovations inspired by nature.

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Cyclonic storm alert issued for Odisha

State likely to experience heavy rain on October 10 and 11: met. department

PRESS TRUST OF INDIA
BHUBANESWAR

The National Emergency Response Centre (NERC), under the Home Ministry, has cautioned the Odisha government against a looming cyclonic storm in the next two to three days, official sources said.

In an advisory to Chief Secretary A.P. Padhi and Special Relief Commission B.P. Sethi, the NERC said on Monday that a depression formed over south-east Bay of Bengal was likely to move north-westwards towards Odisha coast over the next 72 hours.

"The depression is likely to intensify by tomorrow (Tuesday) and turn into a cyclonic storm in the following hours. It is very likely to move north-westward towards Odisha and adjoining north Andhra Pradesh coast during the next 72 hours," the advisory said.

Precautionary measures

The State government should take appropriate precautionary measures under such circumstances, it added.

H.R. Biswas, the Director of the Meteorological Centre in Bhubaneswar, also confirmed in the morning that a "depression has been recorded at a distance of 720 km from Gopalpur coast in Odisha". The State was likely to experience heavy rain on October 10 and 11, he stated.

Mr. Sethi said that he was in touch with the India Meterological Department headquarters in New Delhi on the matter.

The State government would issue alert to districts well in advance, he said.

The IMD, in a special bulletin on Monday afternoon, said Odisha could expect heavy to very heavy rainfall at isolated places in the coastal areas for four days, beginning on October 9.

Squally winds

Squally winds reaching a speed of 45 to 55 km per hour, gusting to 65 km per hour, were also likely to prevail along and off north Andhra Pradesh, Odisha and West Bengal coasts from October 9 afternoon, it said.

Fishermen have been advised not to venture into central Bay of Bengal from October 8 to 10 and northern part of the sea from October 9 to 11, the IMD bulletin added.

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H-9

गंगा घाटी क्षेत्र में 20 फीसदी कम हो सकती है बारिश, अगर ऐसा हुआ तो खाद्यान्न के उत्पादन में कमी आ सकती है

तापमान दो डिग्री बढ़ा तो यूपी-बिहार में सूखा पड़ेगा

आईपीसीसी रिपोर्ट

नई दिल्ली | मदन जैड़ा

तापमान में बढ़ोतरी का सबसे बुरा प्रभाव गंगा घाटी क्षेत्र में पड़ सकता है। जलवायु परिवर्तन पर अंतरसरकारी पैनल (आईपीसीसी) की ताजा रिपोर्ट के अनुसार, यदि औसत तापमान में दो डिग्री बढ़ोतरी होती है तो यूपी, बिहार जैसे गंगा घाटी वाले राज्यों में बारिश में 20 फीसदी की कमी आ सकती है। बारिश में 20 फीसदी की कमी का मतलब सूखा पड़ना होता है।

आईपीसीसी की सोमवार को जारी रिपोर्ट में कहा गया कि वैश्विक कार्बन उत्सर्जन में 50 फीसदी कमी लानी होगी। वरना सदी के आखिर तक तापमान में बढ़ोतरी दो डिग्री या इससे ज्यादा हो सकती है। रिपोर्ट के अनुसार, यह स्थिति पूरी दुनिया के लिए खतरनाक है। लेकिन इसमें भारत और दक्षिणपूर्व एशिया का अलग से संदर्भ लेते हुए कहा गया है कि इन देशों के लिए स्थिति ज्यादा चिंताजनक है।

रिपोर्ट में कहा गया, यदि तापमान में बढ़ोतरी दो डिग्री होती है तो इससे गंगा घाटी वाले राज्यों में बारिश में 20 फीसदी तक की कमी आ सकती है। उत्तरप्रदेश, हिमाचल, उत्तराखंड, राजस्थान, पंजाब, हरियाणा, दिल्ली, गुजरात, मध्यप्रदेश, बिहार, झारखंड और आंशिक रूप से पश्चिम बंगाल इन राज्यों में शामिल हैं। देश में सबसे उपजाऊ माना जाने वाला गंगा घाटी क्षेत्र पहले ही कम बारिश और बाढ़ की समस्या से जूझ रहा है। ऐसे में यह रिपोर्ट और भी चिंताएं पैदा करती है।

गंगा घाटी क्षेत्र देश के भीतर 10 लाख वर्ग किलोमीटर से भी ज्यादा बड़ा है। कृषि के लिहाज से यह सबसे उपजाऊ क्षेत्र है। इसके कुछ इलाकों को छोड़कर ज्यादातर हिस्से खेती के लिए बारिश पर निर्भर हैं। इसलिए बारिश में 20 फीसदी कमी कृषि के लिए घातक साबित हो सकती है।

खाद्यान्न उत्पादन घटेगा : रिपोर्ट में तापमान बढ़ोतरी के खतरों से आगाह करते हुए कहा गया है कि भारत और अन्य दक्षिणपूर्वी एशियाई देशों में कृषि उत्पादन बुरी तरह प्रभावित हो सकता है। गेहूं का छह फीसदी, चावल का 3.2 फीसदी, मक्का का 7.4 तथा सोयाबीन का 3.1 फीसदी उत्पादन घट सकता है।

ग्लेशियरों पर प्रभाव : रिपोर्ट के अनुसार, दो डिग्री तापमान बढ़ने की स्थिति में ग्लेशियरों में जमी एक तिहाई बर्फ पिघलकर खत्म हो जाएगी। इसका दुष्प्रभाव इन ग्लेशियरों से निकलने वाली नदियों के जलस्तर पर पड़ेगा जिन पर भारत और पड़ोसी देशों में करीब 80 करोड़ लोग निर्भर हैं।

गर्म हवाएं : रिपोर्ट के अनुसार, तापमान बढ़ोतरी की स्थिति में कोलकाता समेत कई स्थानों में हर साल वैसी ही गर्म हवाएं चलना आम हो जाएगा जैसी 2015 में चली थीं। बता दें कि तब तापमान 45 डिग्री पार कर गया था और लू की चपेट में आकर ढाई हजार लोगों की मौत देश के विभिन्न हिस्सों में हुई थी।

बढ़ोतरी डेढ़ डिग्री रहे : ग्रीनपीस के अभियान प्रबंधक नंदीकेश शिवालिंगम कहते हैं कि भारत उन सबसे संवेदनशील देशों में शामिल है जहां जलवायु परिवर्तन की वजह से चरम मौसमी घटनाएं होती हैं। भारत जैसे क्षेत्र अत्यंत गर्म हवा की चपेट में आ सकते हैं। जीडीपी को नुकसान पहुंच सकता है। तटीय इलाके पहले ही समुद्री जलस्तर के बढ़ने की वजह से संघर्ष कर रहे हैं, अगर तापमान वृद्धि को 1.5 डिग्री सेल्सियस के नीचे नहीं रखा गया तो और ज्यादा मुसीबत बढ़ेगी।

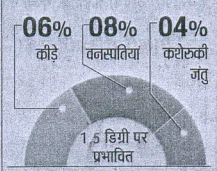
उत्सर्जन रोको या तबाही के लिए तैयार हो जाओ

तापमान बढ़ने के खतरे

- महज 0.50 डिग्री की बढ़त पर्यावरण व जीवजगत में भारी उथल-पुथल मचा सकती है लेकिन इससे मूंगा चट्टानें और आर्कटिक का ग्रीष्मकालीन समुद्री बर्फ समाप्त हो सकते हैं
- दुनियाभर में लाखों लोग लू, पानी की कमी, तटीय बाढ़ के खतरे की जद में आ सकते हैं
- कार्बन उत्सर्जन अभी की तरह जारी रहा तो अत्यधिक गर्मी बढ़ेगी
- इससे दुनियाभर में बाढ़ और बीमारियों से तबाही बढ़ने का अंदेशा
- ऊंची समुद्री लहरें, खारे पानी व छोटे बवंडर जैसी समस्याएं भी होंगी
- पेरिस जलवायु समझौते के लक्ष्य को पाना भी मुश्किल हो जाएगा

वनस्पति और जंतु

दोनों प्रजातियां अपना आधे से अधिक दायरा खो देंगी



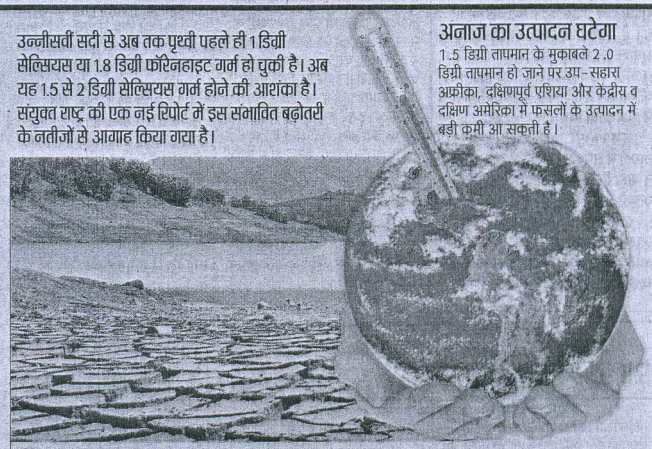
आर्कटिक ग्रीष्मकालीन समुद्री बर्फ की स्थिति

1.5 डिग्री तापमान रहने पर ज्यादातर गर्मियों में समुद्री बर्फ बनी रहेगी

2.0 डिग्री तापमान होने पर गर्मियों में समुद्री बर्फ के खत्म हो जाने की 10 गुना अधिक संभावना है

0.5 डिग्री की बढ़ोतरी से ध्रुवीय भालू, व्हेल, सील, समुद्री पक्षियों के आवास पर बुरा असर पड़ेगा, लेकिन इससे आर्कटिक में मत्स्यपालन को लाभ हो सकता है

उन्नीसवीं सदी से अब तक पृथ्वी पहले ही 1 डिग्री सेल्सियस या 1.8 डिग्री फॉरेनहाइट गर्म हो चुकी है। अब यह 1.5 से 2 डिग्री सेल्सियस गर्म होने की आशंका है। संयुक्त राष्ट्र की एक नई रिपोर्ट में इस संभावित बढ़ोतरी के नतीजों से आगाह किया गया है।



अनाज का उत्पादन घटेगा

1.5 डिग्री तापमान के मुकाबले 2.0 डिग्री तापमान हो जाने पर उप-सहारा अफ्रीका, दक्षिणपूर्व एशिया और केंद्रीय व दक्षिण अमेरिका में फसलों के उत्पादन में बड़ी कमी आ सकती है।

चरम गर्मी

- विश्व जनसंख्या हर पांच साल में एक भीषण गर्मी के संपर्क में आएगी जैसा कि दक्षिण-पूर्वी यूरोप में 2007 में हुआ था
- **1.5** डिग्री तापमान पर लगभग 14% विश्व जनसंख्या प्रभावित होगी
- **2.0** डिग्री तापमान होने पर 37% विश्व जनसंख्या प्रभावित होगी
- **0.5** डिग्री की बढ़त से दुनियाभर में जबरदस्त गर्मी अपेक्षाकृत आम हो जाएगी, जबकि उष्णकटिबंधीय क्षेत्र में असामान्य गर्म दिनों में सर्वाधिक वृद्धि होगी

पानी की कमी

- शहरी आबादी में वृद्धि ने पानी की भीषण कमी के खतरे को उजागर किया
- **1.5** डिग्री तापमान पर दुनियाभर में 35 करोड़ से अधिक लोग प्रभावित
- **2.0** डिग्री पर प्रभावितों की संख्या 41.1 करोड़ से ज्यादा हो जाएगी
- **0.5** डिग्री तापमान बढ़ने से भूमध्य क्षेत्र में खास तौर पर सूखे की समस्या बढ़े जाएगी

मूंगा चट्टानों की स्थिति

- **1.5** डिग्री तापमान पर बहुत बार बड़े पैमाने पर खात्मा
- **2.0** डिग्री तापमान पर मूंगा चट्टान ज्यादातर खत्म हो जाएंगे

समुद्री जलस्तर में वृद्धि

- 2100 में दुनियाभर में बड़ी आबादी को बाढ़ के खतरे का सामना करना पड़ सकता है
- 1.5 डिग्री तापमान पर 3.1 करोड़ से 6.9 करोड़ लोग प्रभावित
- 2.0 डिग्री तापमान होने पर 3.2 से 8.0 करोड़ लोग प्रभावित होंगे
- 0.5 डिग्री की बढ़ोतरी से छोटे द्वीपीय देशों के डूबने का खतरा काफी बढ़ जाएगा

स्रोत : एजेंसियां (तापमान के आंकड़े सेल्सियस में)

News item/letter/article/editorial published on 09.10.2018 in the

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The Hindu ✓
Rajasthan Patrika (Hindi)
Deccan Chronicle
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Aaj (Hindi)
Indian Nation
Nai Duniya (Hindi)
The Times of India (A)
Business standard
THE ECONMIC TIMES

and documented at Bhagirath(English)& Publicity Section, CWC.

India faces threat of deadly heat waves, says UN climate report

IPCC panel study prescribes 'large-scale changes' to keep the rise in global temperature below 1.5°C

JACOB KOSHY
NEW DELHI

If the average global temperature rises by more than one degree Celsius from the present, India could "annually" expect conditions like the 2015 heat wave that killed at least 2,000, according to the 'Special Report on Global Warming of 1.5°C,' commissioned by the Intergovernmental Panel on Climate Change (IPCC).

The report was put together by about 91 authors and review-editors from 40 countries, who had convened in Incheon, South Korea, last week, to assess the feasibility of keeping the average global temperature from rising beyond 1.5 degree Celsius from pre-industrial times.

Achieving this would require "rapid, far-reaching and unprecedented changes in all aspects of society," the IPCC said in the assessment. The 2015 agreement in Paris, considered a landmark achievement, had the world agree to keep rise in temperatures below 2 degrees Celsius and "pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels."

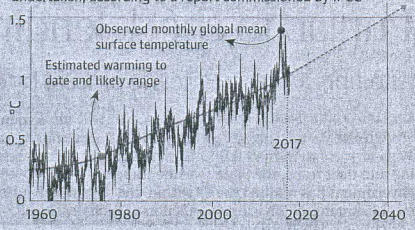
With the U.S. withdrawing from the accord, the chances of such an ambitious target were significantly weakened.

Rapid transitions

The report stated that capping the rise in temperature to 1.5 degrees Celsius would require "rapid and far-reaching" transitions in land, energy, industry, buildings, transport and cities.

Boiling point

The rise in average global temperature by more than 1.5°C is inevitable soon unless measures to cut CO_2 emissions are not undertaken, according to a report commissioned by IPCC



The global net human-caused emissions of carbon dioxide (CO_2) would need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050. This means any remaining emissions would need to be balanced by removing CO_2 from the air.

However, allowing the global temperature to temporarily exceed the 1.5°C target would mean a greater reliance on techniques that remove CO_2 from the air, if the aim is to return the rise in global temperature to below 1.5°C by 2100.

Many of these techniques, such as carbon capture and storage, were unproven on a global scale and some carried significant risks for sustainable development, the report said.

"Limiting global warming to 1.5°C, compared with 2°C, would reduce challenging impacts on ecosystems, human health and well-being," Priyardarshi Shukla, Co-Chair of IPCC Working Group III, said in a statement.

A representative of the Indian delegation told *The Hindu* that much of the discussion centred on government officials questioning the authors on the scientific basis of their assessment.

"An earlier draft said there was 'high confidence' of the extent of changes to the Indian monsoon. This subsequently became 'medium confidence'," said the official, who didn't want to be identified.

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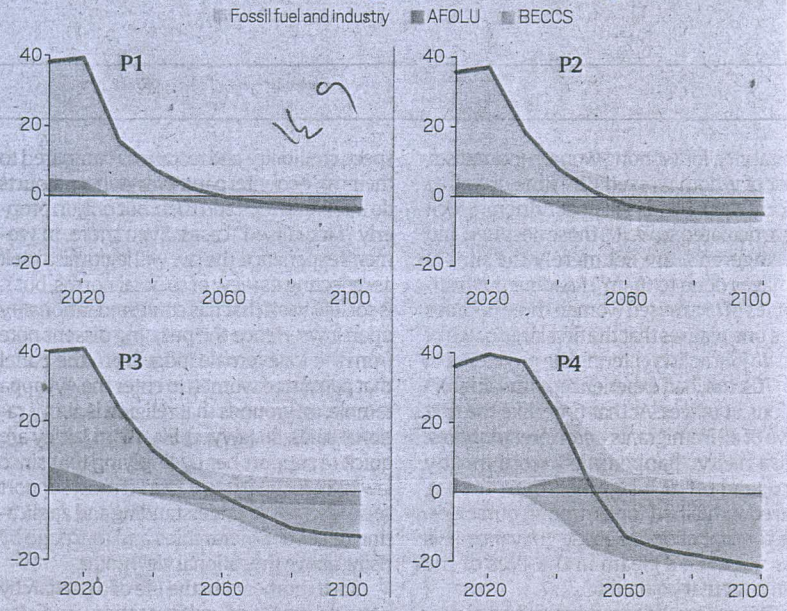
FACT CHECK, GROUND REALITY

FOR LIMITING GLOBAL WARMING TO 1.5°C, THE 4 PROJECTED PATHWAYS

BILLION TONNES CO_2 PER YEAR ($GtCO_2$/YR)



IN ITS report released at the end of a meeting in Seoul, the Intergovernmental Panel on Climate Change has made projections for how the rise in global average temperatures can be restricted within 1.5°C of pre-industrial times. As reported in *The Indian Express* Monday, it has presented four possible pathways. As shown in the graphs, they involve Carbon Dioxide Removal (CDR) in varying amounts. The pathways account separately for contributions of fossil fuel and industry, Bioenergy with Carbon Capture and Storage (BECCS), and removals in the Agriculture, Forestry and Other Land Use (AFOLU).

In each pathway, the global average temperature is projected to overshoot the 1.5°C target by some amount before returning to that level by the end of this century. Each looks at a different scenario of the global energy demand:

P1: A scenario in which social, business, and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. A down-sized energy system enables rapid decarbonisation of energy supply. Afforestation is the only CDR option considered; neither fossil fuels with CCS nor BECCS are used.

P2: A scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS.

P3: A middle-of-the-road scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

P4: A resource and energy-intensive scenario in which economic growth and globalization lead to widespread adoption of greenhouse-gas intensive lifestyles, including high demand for transportation fuels and livestock products. Emissions reductions are mainly achieved through technological means, making strong use of CDR through the deployment of BECCS.

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