Climate change data

Selection of AstraZeneca sites and their exposure to climate change

Understanding the potential impact of future climate scenarios, together with proactive mitigation, intervention plans and targeted investment, will future-proof our business and build resilience to ensure our long-term financial sustainability and continued supply of medicines to patients. It is critical to understand the physical risks of climate change to our workforce, local communities, our assets, and supply to patients.

Climate scenario analysis based on reliable models and predictions helps us to understand the potential impact of climate change on our business, to inform our business and financial planning. In line with the TCFD strategy guidance, we use a low/medium/high case scenario analysis based on the Representative Concentration Pathways (RCP) shared by the Intergovernmental Panel on Climate Change (IPCC).

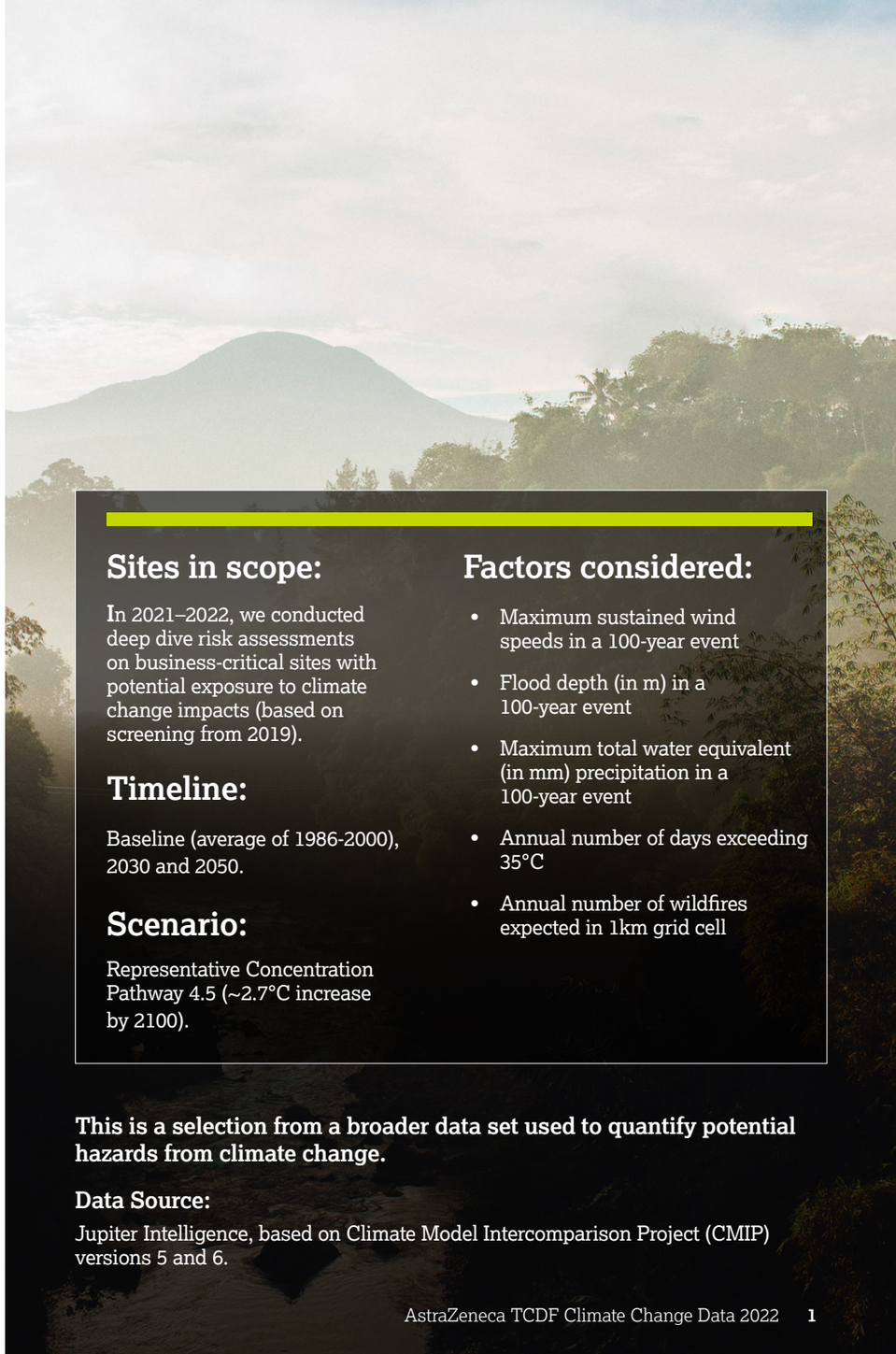
In this document, we share the results from RCP 4.5 and what that means for a selection of AstraZeneca locations. RCP 4.5 is an intermediate scenario with emissions peaking in 2040 and falling rapidly thereafter until 2080.

The climate scenarios are applied in 'deep dive' risk assessments at priority sites. The assessments cover:

- Inventory of hazards
- Risk analysis
- Risk evaluation
- Identification of mitigation measures

Global subject matter experts coordinate these assessments together with local representation from the Manufacturing, Facilities Management, Safety, Health and Environment functions and the Risk Management Network. Where appropriate, the risk mitigation measures and management are captured in the local risk register. Measures and actions to address these risks are included in the site master plans and business continuity plans as they are developed, and captured under the mid- and long-term financial planning for that site and function. Information about identified risks and potential impact on the business is disclosed in our TCFD reporting, as well as the following four case studies:

- Extended periods of heat at the manufacturing site in Sweden
- Precipitation-induced landslides near the manufacturing site in Japan
- High wind speed at the manufacturing site in Puerto Rico
- 2022 AZ Forest TCFD



Sites in scope:

In 2021–2022, we conducted deep dive risk assessments on business-critical sites with potential exposure to climate change impacts (based on screening from 2019).

Timeline:

Baseline (average of 1986-2000), 2030 and 2050.

Scenario:

Representative Concentration Pathway 4.5 (~2.7°C increase by 2100).

Factors considered:

- Maximum sustained wind speeds in a 100-year event
- Flood depth (in m) in a 100-year event
- Maximum total water equivalent (in mm) precipitation in a 100-year event
- Annual number of days exceeding 35°C
- Annual number of wildfires expected in 1km grid cell

This is a selection from a broader data set used to quantify potential hazards from climate change.

Data Source:

Jupiter Intelligence, based on Climate Model Intercomparison Project (CMIP) versions 5 and 6.

				Heat Days per year with temperature >35°C			Flood Depth of the water (in metres) at the 100-year return period*			Wind Maximum 1-minute sustained wind speed (in km/hr) experienced at the 100-year return period			Precipitation Maximum daily total water equivalent precipitation (in mm) experienced at the 100-year return period			Wildfire Number of wildfires expected in a 1sq km grid cell (over 1,000 years)		
Site name	**Ownership Type**	**Country**	**Main Acvitity**	**Baseline**	**2030**	**2050**	**Baseline**	**2030**	**2050**	**Baseline**	**2030**	**2050**	**Baseline**	**2030**	**2050**	**Baseline**	**2030**	**2050**
Alexion (Athlone)	O	IE	●	0	0	0	0.0	0.0	0.0	114	111	111	65	73	74	0	0	0
Alexion (Bogart)	O	US	●	27	34	38	0.0	0.0	0.0	88	87	87	218	242	246	0	1	1
Alexion (Dublin)	O	IE	●	0	0	0	0.0	0.0	0.0	113	112	112	75	84	86	0	0	0
Bangalore	O	IN	●	23	26	29	0.0	0.0	0.0	108	108	108	155	151	160	16	15	15
Cairo	O	EG	■	75	95	105	0.0	0.0	0.0	73	72	72	30	31	33	20	21	22
Canovanas	O	US	●	6	7	7	0.0	0.0	0.0	169	170	171	266	292	304	1	1	1
Chennai	L	IN	▲	74	83	95	0.0	0.1	0.3	208	208	209	510	519	523	6	6	6
Chennai	L	IN	◆	74	83	96	0.0	0.0	0.0	204	204	205	495	505	511	6	5	5
Cotia	O	BR	●	3	4	5	0.0	0.0	0.0	75	76	77	228	244	251	3	3	4
Dunkerque	O	FR	●	1	1	1	1.9	2.1	2.3	112	112	112	69	71	74	1	1	1
Frederick	O	US	●	21	28	31	0.0	0.0	0.0	98	100	101	201	217	228	0	0	0
Gaithersburg	O/L	US	⬢	20	27	30	0.0	0.0	0.0	101	102	103	208	226	238	1	1	1

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▲ IT ● Manufacturing ⬢ R&D

◆ DC ■ Packaging

	Heat	Flood	Wind	Precipitation	Wildfire
Highest	>30 days	>3.0m	>178 km/h	>250mm	>20
High	20-30 days	2.0-3.0m	119-178 km/h	200-250mm	8-20
Medium	10-20 days	1.0-2.0m	90-119 km/h	150-200mm	4-8
Low	5-10 days	0.25m-1.0m	63-90 km/h	100-150mm	2-4
Lowest	<5 days	<0.25m	<63 km/h	<100mm	<2

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Gothenburg	O/L		⬢	1	2	2	0.0	0.0	0.0	113	111	111	63	68	72	1	1	1
Guadalajara	L		▲	14	17	21	0.0	0.0	0.0	95	99	102	99	111	121	22	24	26
Kochi	L		◆	24	29	32	0.0	0.0	0.0	133	133	133	325	354	383	4	5	5
Lomas Verdes	O		■	0	0	0	0.0	0.0	0.0	79	82	83	274	312	331	11	12	14
Maihara	O		●	14	16	18	0.0	0.0	0.0	167	168	168	282	289	302	0	0	0
Mount Vernon	O		●	29	36	41	0.0	0.0	0.0	96	93	93	159	183	184	1	2	2
New Delhi	L		◆	111	115	130	0.0	0.0	0.0	59	57	57	299	332	345	60	59	59
Newark	O		●	14	20	22	0.0	0.0	0.0	121	124	123	188	205	209	0	0	0
North Ryde	O		●	4	5	5	0.0	0.0	0.0	118	118	118	230	222	242	1	1	1
Osaka	L		◆	21	25	27	5.2	5.4	5.5	175	174	176	272	294	305	1	1	1
Philadelphia	L		●	16	21	24	0.0	0.0	0.0	119	121	122	183	206	206	0	0	0
Redwood City	O/L		●	6	7	8	1.2	1.5	1.6	110	109	108	94	99	105	10	11	12

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◆ DC ■ Packaging

Heat	
Highest	>30 days
High	20-30 days
Medium	10-20 days
Low	5-10 days
Lowest	<5 days

Flood	
Highest	>3.0m
High	2.0-3.0m
Medium	1.0-2.0m
Low	0.25m-1.0m
Lowest	<0.25m

Wind	
Highest	>178 km/h
High	119-178 km/h
Medium	90-119 km/h
Low	63-90 km/h
Lowest	<63 km/h

Precipitation	
Highest	>250mm
High	200-250mm
Medium	150-200mm
Low	100-150mm
Lowest	<100mm

Wildfire	
Highest	>20
High	8-20
Medium	4-8
Low	2-4
Lowest	<2

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Speke	**L**		●	0	0	0	0.0	0.0	0.0	110	109	109	61	68	68	0	0	0
Södertälje	**O/L**		●	1	2	2	0.0	0.0	0.0	91	90	91	64	71	72	1	1	1
Taizhou	**O**		●	27	33	36	0.0	0.0	0.0	190	195	198	427	448	476	1	1	1
West Chester	**O**		●	24	29	33	0.0	0.0	0.0	90	87	86	148	157	163	0	0	0
Wuxi	**O/L**		●	23	31	34	2.1	2.0	2.8	178	179	182	252	284	285	1	1	1

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* Flood depth estimates assume no existing flood defence. In actuality, a number of these sites benefit from flood mitigation controls