GSMA Climate Policy

July 2020

Mobile Industry Climate Action

The mobile industry recognises the urgency of tackling the global crisis we are facing, that is why we are taking action to mitigate our impacts and to combat climate change, as part of the solution. We also see this risk as an opportunity where the industry is building trust, managing costs as well as investor expectations, reducing risks and innovating to create new markets.

The impact of COVID-19 has shown us how vital our digital infrastructure and connectivity has become to working, socialising, accessing medical care, learning, and many other aspects of our lives. The mobile sector stands ready to help societies move towards lower carbon ways of living to transition to the net zero carbon economy. This requires a common vision, but also the consideration of a diverse range of markets and the steps needed to build the investment incentives, infrastructure and policy frameworks to reach a net zero carbon economy.

In 2019 the GSMA, with the support of its Board members, launched an industry wide Climate Action Programme to work on a path to achieve net zero GHG emissions by 2050, through the following steps:

- Operators disclosure of their climate impacts, risk and opportunities. In 2019, 57 operators covering 5.2 billion connections (63 per cent of total connections) submitted their climate disclosures through the CDP[1]

- Development of a mobile industry pathway to net zero carbon emissions in collaboration with the International Telecommunications Union (ITU), Global e-Sustainability Initiative (GeSI), Science Based Targets Initiative (SBTi) and the Carbon Trust, which was approved and launched in February 2020[2]

- Commitment by Board members to set a 2030 target that is aligned with the net zero pathway to 2050, or to set a carbon reduction target aligned to the National Determined Contribution (NDC) of the country where the board member primarily operates.

29 mobile operator groups representing 30 per cent of mobile connections globally and more than 50 per cent of mobile industry revenues have committed to science-based targets as of July 2020, with 30 per cent of the industry committing since February 2019. The GSMA is providing support and guidance for operators to commit to and set targets aligned with the new net zero pathway.

In addition, while the mobile industry is taking big steps to reduce its emissions, it is having an even larger effect supporting other sectors to reduce their emissions. This is through efficiencies created by the use of smart connected machine-to-machine technologies and behaviour change

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[1] https://www.gsma.com/newsroom/press-release/worlds-leading-mobile-operators-to-disclose-climate-impacts-as-part-of-new-gsma-led-climate-action-roadmap/
[2] https://www.gsma.com/newsroom/press-release/ict-industry-agrees-landmark-science-based-pathway-to-reach-net-zero-emissions/

from smartphones use. The 2019 Enablement Effect[3] report estimated the emissions savings were almost ten times greater than the global carbon footprint of the mobile industry itself.

Industry commitment to climate action

As an industry we recognise there is a climate and environmental emergency and we commit to work together address the challenge. We commit to reducing emissions in line with science. As an industry we are aiming for a 1.5°C aligned science-based target and transition to net zero emissions by 2050. We are taking action in several ways, such as:

1. Disclosing climate impacts, risks and opportunities every year so stakeholders can understand how the mobile industry is progressing, e.g. using TCFD's framework; disclosing to CDP.

2. Setting carbon reduction targets with best practice being aligned to the ICT sector pathway to net zero carbon emissions by 2050[4] or faster emissions reductions

3. Reducing Scope 1 and 2 carbon emissions through energy efficiency improvements, investing in new renewable electricity capacity and low carbon vehicles

4. Reducing Scope 3 emissions by engaging with suppliers to encourage them to set carbon reduction targets

5. Supporting other sectors to decarbonise through the use of smart connected technologies and behaviour change to improve efficiency and enable the low carbon economy

We call on governments to:

- Prioritise a just transition to economy-wide net zero emissions by 2050 at the latest, in particular as governments work on aid and economic recovery packages in response to COVID-19, and ensuring that vulnerable communities do not bear the brunt of climate change in a disproportionate manner

- Strengthen NDC's and 2030 targets in line with a 1.5°C trajectory, and define viable targets and other necessary actions among the public and private sectors

- Lay out national policies and plans to enable the achievement of these targets

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[3] https://www.gsma.com/betterfuture/enablement-effect
[4] https://www.gsma.com/betterfuture/resources/setting-climate-targets

- Consult on new policies and give sufficient time for businesses to adapt, avoiding abrupt changes in policy and considering both public health and economic growth

- Develop, through dialogue with business and other stakeholders, just transition plans which create and protect resilient green jobs, and provide education, reskilling and retraining opportunities for the workforce

- Work together with businesses to create a viable 'ambition loop' where policymakers have the confidence to set policies to incentivise and raise business standards that are aligned with the technology, energy sources and infrastructure available to businesses

- Put in place policies and economic incentives to reward companies' low-emissions strategies

- Provide support for research, development and deployment of new climate technologies

- Facilitate financing and public procurement to create demand and accelerate private sector investments to deploy proven tech at scale.

What does net zero mean?

Reaching net zero carbon emissions, entails achieving a balance between manmade carbon emissions and manmade carbon removals over a specified period. Manmade carbon removals are classified by the Intergovernmental Panel on Climate Change (IPCC) as activities that remove carbon from the atmosphere and store it for a long period of time. Examples of existing carbon removal processes include afforestation, reforestation, soil carbon sequestration and carbon capture and storage.

For a company, reaching net zero emissions means achieving a state in which the activities within the value chain of a company result in no net impact on the climate from greenhouse gas emissions. This should cover all emissions, including Scope 3 and can be done by balancing any remaining emissions in the value chain with an equal amount of carbon removals. Alongside immediate abatement measures, businesses should transition to limiting offsets for the neutralisation of "residual emissions", ensuring all offsets meet robust standards for additionality, permanence and accounting. Offsets portfolios should transition to permanent removals by the time net zero is achieved.

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[5] https://unfccc.int/sites/default/files/resource/Minimum-criteria-for-participation-in-RTZ.pdf

Energy Efficiency (EE)

Operators globally spend approximately US$17 billion on energy each year[6]. As mobile usage and demand for widespread connectivity continues to grow quickly, so does the demand for energy, particularly from the network infrastructure. For financial and environmental reasons, EE is high on the corporate agenda of mobile operators. The industry has been driving EE innovation in each new generation of network, with 5G being the most energy efficient yet.

The roll-out of 5G and greater densification of towers means in the short term there is expected to be an increase in electricity consumption of mobile networks. Mobile networks are part of a complex ecosystem requiring cooperation between stakeholders in order to effectively pursue EE. For example, a key part of the route to managing electricity use in the medium term, to 'bend the curve', will be to switch off older less energy efficient networks such as 2G and 3G, in regions where these networks are no longer required. This will require agreement with stakeholders still using these legacy networks.

<u>Industry commitment to EE</u>

As an industry we recognise the need for EE. This will be an important part of achieving our carbon reduction goals and helping move the industry to net zero emissions. We are taking action in several ways, such as:

- Improving the EE of new networks with 5G's specification calling for a 90 per cent reduction in the energy used to transfer each unit of data[7]

- Switching off and removing legacy network equipment as soon as it becomes feasible to support the migration to newer, more energy efficient equipment

- Running EE programmes to identify energy hotspots and deploy measures to reduce energy consumption. Examples of best practice include temperature optimisation, free cooling at cell sites, power saving software features, selective switch-off and generator-battery hybrids

- Encouraging operators to gain the ISO 50001 certificate, the standard for energy management systems in organisations

- Sharing and encouraging alignment with energy best practice across the industry to highlight operators' energy efficiency measures

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[6] https://www.gsma.com/betterfuture/climate-handbook
[7] https://www.gsma.com/wp-content/uploads/2019/04/The-5G-Guide_GSMA_2019_04_29_compressed.pdf

- Making fleets more energy efficient by investing in more fuel efficient and lower carbon vehicles such as hybrids and electric vehicles, and

- Improving access to electric vehicle charging stations to facilitate the transition

- Avoiding travel where possible by introducing video conferencing facilities and collaborative working software, and scaling back requirements on commuting for employees.

We call on governments to:

- Support the roll out of newer, more energy efficient networks such as 5G, where it is feasible

- Enable older less energy efficient legacy equipment to be retired in regions where this is feasible and circumstances dictate market readiness for deployment

- Provide incentives for businesses to deploy EE measures, for example, through reduced taxation when upgrading equipment, regulatory treatment and competition rules in favour of network sharing agreements, preference in public procurement

- Support research and development of new EE innovation, for example of network equipment, data centres and buildings

Renewable Energy (RE)

The fastest route for mobile operators to reduce carbon emissions is by investing in RE to power their operations. Many operators around the world are already doing this and have targets put in place to source all of their electricity requirements from renewable sources.

As an industry, we must match the upward pressure on electricity demand from new networks with the downward pressure we are looking to exert on carbon emissions to reach net zero. The availability of RE is key to achieving this.

However, there are challenges in sourcing RE in many markets. For some markets, this is due to centralised market control, while for others this is due to a lack of appropriate financial and legal structures to support investment in renewables. Some countries lack access to sufficient RE sources, and for some it is a combination of these and other factors.

Industry commitment to RE

As an industry, we recognise the urgent requirement to decarbonise electricity. We want to move away from using fossil fuels and towards renewable sources to generate electricity. We want to support the development of new RE capacity. We are taking action in several ways, such as:

- Developing targets and demonstrating progress to source 100 per cent RE for networks, data centres, buildings, and infrastructure including towers managed by TowerCos and ESCOs

- Publicly declaring our RE commitments, for example through the RE100 initiative, sending strong demand signals to the marketplace and to policymakers

- Investing in new RE capacity, for example by installing onsite renewable energy and by agreeing power purchase agreements (PPAs) with new generators

- Engaging with policymakers to highlight the challenges around developing and accessing RE and advocating solutions to these challenges

We call on governments to:

- Grow RE capacity to support the transition from a fossil fuel economy

- Support industry access to RE by removing regulatory barriers and implementing stable frameworks

- Integrate climate policy into energy policy frameworks to ensure climate targets are met and synergies maximised

- Improve access to finance for renewables, particularly in developing countries

- Expand low-voltage networks for decentralised RE generation

- For areas off-grid, introduce measures to stimulate direct investments in production for self-generation of RE, support community energy grids and site sharing which will have additional social and economic benefits

- Reduce barriers to new RE with policy incentives to encourage early-stage innovation, e.g. subsidies for new RE technologies to make the technology cost-competitive at an early stage

- Create market-based energy pricing and tariffs, and long term RE contracts (green tariff programmes)

- Support a credible and transparent system for issuing, tracking, and certifying Environmental Attribute Certificates (EACs) (Guarantees of Origin, Renewable Energy Certificates, etc.) and consider the development and use of an electronic system for tracking and trading

- Offer clear and transparent grid-access rules and electricity transport arrangements that permit both on-site and off-site power purchase agreements (PPAs)

- Review Grid Feed in policy and Feed in Tariff models to enable small scale renewable power generators be inclusive in the national RE policies and action plans.

Digitisation reducing emissions: the enablement effect

Mobile technology has an immense capacity to globally reduce the impact of climate change, through the digitisation of wider industries. The mobile sector is committed to reducing its own emissions, but its greatest contribution to combating climate change is reducing the emissions of wider industries through smart connected technologies and behaviour change.

The total annual emissions of the mobile sector are approximately 220 $MtCO_2e$, which is about 0.4 per cent of total global emissions. Compared to the global carbon footprint of mobile networks themselves, the level of avoided emissions enabled by mobile communications technologies is 10 times greater – a tenfold positive impact.

The majority of these avoided emissions result from a decrease in electricity, gas, and fuel consumption. In 2018, mobile communications technologies enabled a decrease in 1.44 billion MWh of electricity and gas, and 521 billion litres of fuel, globally.

Digitisation is expected to disrupt all parts of the economy over the next decade and, if sufficient policy and investment is received, has the potential to be a key driver of low carbon development.

We call on governments to:

- Recognise digitisation supports decarbonisation. For a just transition, this should be accompanied by supporting policy measures in place to minimise the negative employment impact resulting from these

- Encourage and incentivise investments that contribute in some form to climate change mitigation or adaptation, regardless of the sector

- Promote regulation that favours a broader digitisation of the economy combined with a robust digital governance framework to boost the transformation that many sectors must undertake

- Stimulate the sharing economy e.g. bike sharing, vehicle sharing, home sharing, etc. and new business models arising from faster mobile connectivity

- Encourage the use of smart technologies to:

  o reduce building energy consumption

  o connect and automate vehicles to reduce transportation emissions

  o increase renewable energy networks through smart grids

  o support remote working and virtual meetings

  o improve agricultural resilience and adaptation, and reduce resource consumption

  o advance manufacturing processes and the ecosystem around them to create more flexible, efficient and sustainable production lines

  o help consumers increase energy efficiency

Equipment sustainability

One of the biggest impacts the mobile industry has on the climate is due to the manufacture and use of devices and equipment. Around 50m tonnes of e-waste are produced every year and that figure is rising rapidly. Although mobile phones form a small proportion of overall e-waste by weight, they are more valuable than some other waste streams because of the rare earth minerals and metals within them[8].

The mobile industry is committed to improving the sustainability of devices by moving away from linear business models of mine-manufacture-use-dispose, and towards more circular business models that repair, reuse and recycle equipment. These circular business models treat unwanted equipment as sources of material for other uses, rather than as waste.

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[8] https://www.gsma.com/mobilefordevelopment/blog/understanding-the-mobile-waste-management-efforts-of-mnos-in-emerging-markets/

Mobile companies are actively engaging in and supporting new e-waste policies and legislation around the world, and creating new reverse logistics supply chains to manage the flow of equipment for recycling. The Clean Tech Programme[9] in Mobile for Development, and the We Care Initiative[10] are both examples of industry-led action to improve the sustainability of devices.

The industry is also working with suppliers to evaluate their level of sustainability and support them to manage and reduce their carbon emissions. An example of this is the operator-led Joint Audit Co-operation[11], formed of 17 operators, which works with around 200 tier one suppliers on sustainability across the mobile industry.

We call on governments to:

- Form clear policies and standards to drive energy and materials efficiency and circularity

- Establish low carbon public procurement standards

- Include recommendations that products are designed for circularity

- Create innovation support and incentives to support circular solutions

- Develop infrastructure for handset reuse, and component and material recycling

- Engage with operators and equipment/device manufacturers on waste regulation on what happens at the end of a product's life

Adapting to a changing climate

If climate change results in more rising sea levels, more hurricanes, tornados and other extreme weather events, mobile operators' networks could be damaged with greater frequency, resulting in greater financial risks.

Operators are likely to come under increasing pressure to make their networks as robust as possible so that they can withstand extreme weather and/or be restored quickly. At the same time, mobile technology is uniquely positioned to provide and enable tools for climate change mitigation, adaptation, weather disaster response, pollution and environmental monitoring.

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[9] https://www.gsma.com/mobilefordevelopment/cleantech/
[10] https://www.gsma.com/betterfuture/we-care
[11] http://jac-initiative.com/

Mobile operators are also leveraging their Big Data & AI capabilities to develop insights to governments and aid agencies to monitor air pollution levels, prepare for disasters and analyse their impact on a country[12].

Mobile-based weather forecasts and agri-climatic advisory, for example, provide information to help vulnerable smallholder farmers dependant on rain-fed agriculture adapt to climate change.

GSMA taking action

The GSMA disclosed to the CDP for the first time in 2019, achieving a grade B. This complemented the environmental activities the GSMA has been doing internally starting with measuring of the carbon footprint of MWC Barcelona in 2011, followed by achieving carbon neutrality in 2014. In 2016 this was extended to the rest of the organisation as well as a commitment to calculating the corporate carbon footprint, including all of the offices around the globe, using the ISO 14064-1 standard.

In 2020, the GSMA will set Science Based Targets (SBTs) in line with achieving net zero emissions by 2050. However, it is noteworthy that in order to achieve this target the GSMA is dependent on the commitments and progress to net zero of other industries, in particular the aviation industry which has adopted targets to mitigate CO_2 emissions, and to a lesser extent the automotive and food industries.

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[12] A number of operators are partnering through GSMA's AI for Impact initiative

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