# 2019 Mobile Industry Impact Report: Sustainable Development Goals

**September 2019**

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with almost 400 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces the industry-leading MWC events held annually in Barcelona, Los Angeles and Shanghai, as well as the Mobile 360 Series of regional conferences.

For more information, please visit the GSMA corporate website at **www.gsma.com**

Follow the GSMA on Twitter: **@GSMA**

GSMA™
# Intelligence

GSMA Intelligence is the definitive source of global mobile operator data, analysis and forecasts, and publisher of authoritative industry reports and research. Our data covers every operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe. It is the most accurate and complete set of industry metrics available, comprising tens of millions of individual data points, updated daily. GSMA Intelligence is relied on by leading operators, vendors, regulators, financial institutions and third-party industry players, to support strategic decision-making and long-term investment planning. The data is used as an industry reference point and is frequently cited by the media and by the industry itself. Our team of analysts and experts produce regular thought-leading research reports across a range of industry topics.

**www.gsmaintelligence.com**

**info@gsmaintelligence.com**

# Table of contents

**2**

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Forewords

#BetterFuture

# A message from Mats Granryd, GSMA Director General

**In 2016, the mobile industry took the landmark decision to commit fully to the UN Sustainable Development Goals (SDGs). Every year since, we have produced this report to monitor progress, showcase our success stories and identify areas where we can do better.**

This year's edition reveals that the mobile industry once again increased its contribution across all 17 Goals in 2018 as a result of ever-increasing mobile broadband and smartphone adoption. This has allowed almost half the world's population to get online via mobile. Almost 1 billion people have begun using mobile internet services since 2015, gaining access to essential communications and a vast array of services that improve their lives on a daily basis.

To maximise our impact over the next decade, we need to bring the other half of the world online too. This isn't simply a case of building new networks; it's about ensuring that getting online is affordable, applicable and safe, and that everyone is equipped with the digital skills to do so.

Accelerating digital inclusion for all will play a key role in reducing inequalities and driving global prosperity. But economic growth cannot succeed without environmental responsibility. That's why this year's report highlights SDG 13: Climate Action and how mobile technology is providing the backbone to a modern, global economy as part of a sustainable, low-carbon – eventually zero-carbon – future.

Limiting warming to 1.5°C, which would substantially reduce the risks and effects of climate change, requires dramatic emission reductions by 2030 and the transition to a zero-carbon economy by 2050. Mobile operators are developing an industry-wide climate action plan, in line with the Paris Agreement, to achieve just that with regard to their own emissions. But there is also a unique opportunity for mobile to enable effective energy-efficient solutions across other sectors, which could ultimately drive a much greater impact.

This report outlines a number of examples of where mobile technology is already driving positive environmental change.

We should celebrate the strong progress we have made in contributing to the SDGs over the past four years. This has been achieved despite increasing political, social and economic upheaval in many places around the world, while the pace of technological change has required us to take on new responsibilities and respond to new challenges.

However, we must also recognise that we must do more, faster, if we are to achieve the 2030 SDG targets, in a little over a decade. We need to extend mobile connectivity to those that remain digitally excluded, and scale mobile-enabled solutions that can deliver measurable impact in tackling urgent global issues such as climate change.

By coming together, by collaborating across industries and across the public and private sectors, I'm confident we can deliver on our ambition.

**Mats Granryd**
Director General
GSMA

**4**

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

# A message from the GSMA Board

On behalf of the GSMA Board, I welcome this report measuring our industry's impact on the world's most important to-do list, the Sustainable Development Goals. We are pleased to see inspiring efforts from operators all over the world to preserve our planet, protect the stability of societies and promote people's well-being.

Our industry has the power to change lives. More than 5 billion people are now connected to a mobile network, equivalent to roughly two-thirds of the world's population. Almost half the world's citizens also use their mobile phones to access the internet, providing them with access to a range of life-enhancing services in areas such healthcare, skills and education, and jobs. We are enabling digital birth registrations for millions of children who lack a formal identity and financial inclusion for the estimated 1.7 billion people excluded from the traditional banking system.

However, half of the world's population is still not connected to the internet. Our challenge is to bring these people with us and to ensure digital inclusion for all with special attention to the most vulnerable. We are making progress: from increasing mobile phone ownership among women to bringing support to more than 30 million people caught up in epidemics and natural disasters.

Our role is very important to reverse or slow the impact of climate change. Through our core products and services, we have the power to enable a global transition to a low-carbon economy. Through 5G and frontier technologies, we can innovate to further help businesses, consumers and communities move towards a more energy-efficient future.

It is encouraging to see more operators starting to set science-based emissions targets, committing to 100% renewable energy commitments and using new technologies to support a cleaner planet. The Board welcomes the industry's resolute commitment to climate action and supports the inspiring leadership and bold ambition for our industry to be net zero by 2050.

**Stéphane Richard**
CEO Orange and
Chairman of GSMA Board

#### #BetterFuture

2019 Mobile Industry Impact Report: Sustainable Development Goals

# 01

# Introduction and key findings

**Introduction and key findings** | **Industry Impact on the SDGs** | **Mobile and climate change** | **Accelerating Impact** | **7**

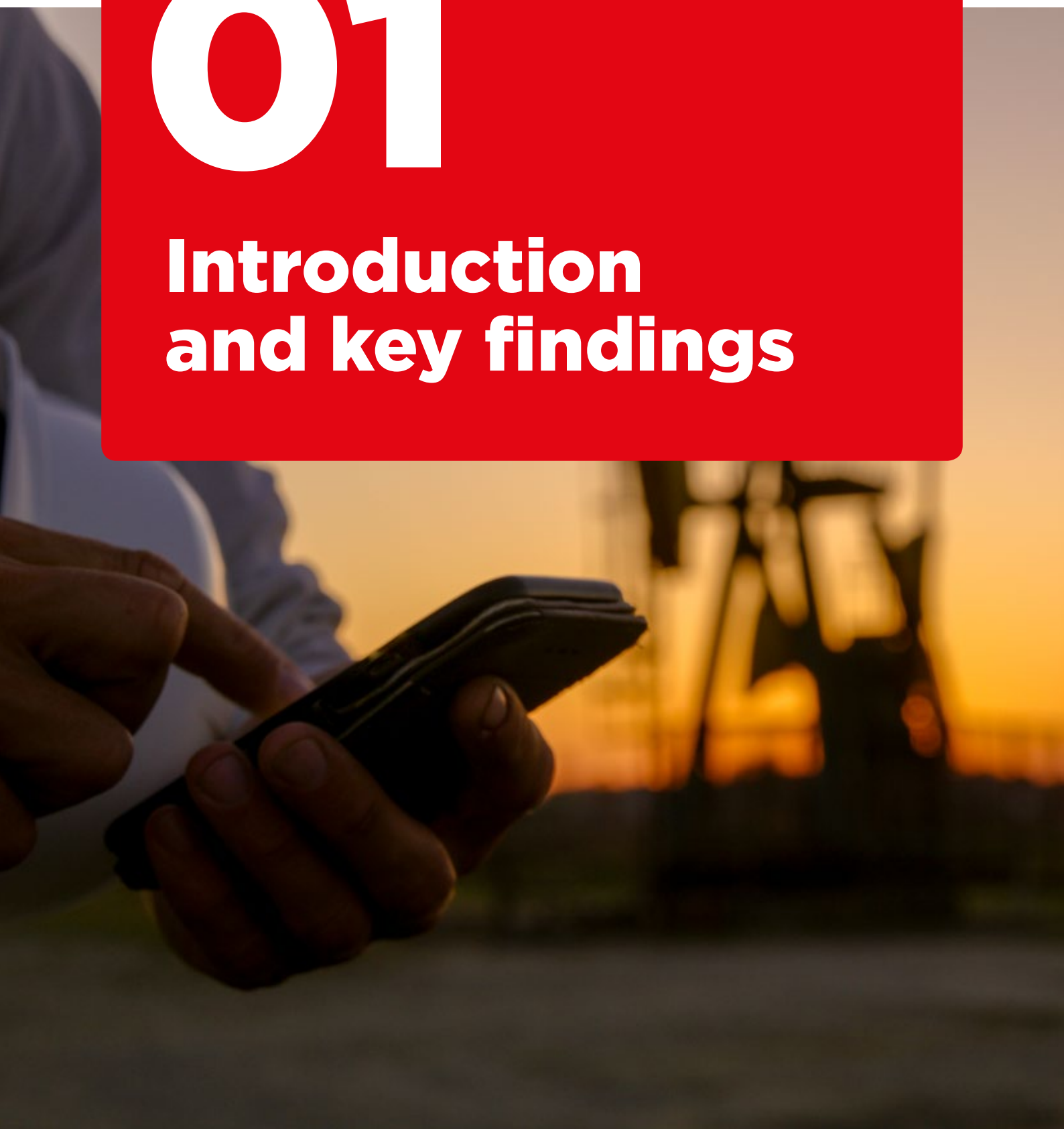2019 Mobile Industry Impact Report: Sustainable Development Goals

**Figure 1**

## UN Sustainable Development Goals



With more than 5 billion unique subscribers worldwide, and more than 7 billion people covered by a mobile network, individuals are increasingly using mobile to access an array of life-enhancing services that contribute to and catalyse the achievement of the UN Sustainable Development Goals (SDGs).

Despite its global reach, the benefits of mobile have not been spread equitably. For example, more than half the world's population are still unable to take advantage of the social and economic benefits that mobile internet can enable. Even among those using mobile and mobile internet services, the majority are not realising the full benefits that are potentially available in terms of accessing health information, public services and digital payments – both in developed and developing countries. New technologies supported by the Internet of Things (IoT) also need to achieve scale if mobile operators are to maximise their impact on the SDGs – for example, solutions in smart cities that can reduce pollution, and smart buildings and homes that can increase energy efficiency.

In 2016, mobile became the first industry to commit to the SDGs. In this fourth annual Mobile Industry Impact Report, we show how and why the mobile industry continued to contribute to all 17 Goals in 2018, together with recommendations to accelerate the industry's SDG impact going forward. As well as highlighting where operators are achieving their biggest and improved impacts, we also take a deep dive into the industry's impact on climate change – the biggest and most urgent risk facing the world.

We need to act fast to fulfil our commitment by 2030. Much more can be done to leverage the power of mobile and support the delivery of the SDG 2030 targets. In the coming years, operators must continue to expand connectivity for the underserved and continue innovating to enable more people to realise the benefits of life-enhancing, mobile-enabled services. They must also operate responsibly by integrating social, environmental and ethical issues into their business practices. This will lead to more positive impacts in the communities in which they operate and drive a substantial contribution to sustainable development.

# 2018 in numbers

**3G COVERAGE**

6.6bn
2017

6.9bn
2018

people covered

88%
2017
→ 90%
2018

**4G COVERAGE**

5.7bn
2017

6.1bn
2018

people covered

74%
2017
→ 79%
2018

**MOBILE ADOPTION**

4.9bn
2017

5.1bn
2018

mobile subscribers

65%
2017
→ 66%
2018

**MOBILE INTERNET ADOPTION**

3.2bn
2017

3.5bn
2018

mobile internet subscribers

43%
2017
→ 47%
2018

2019 Mobile Industry Impact Report: Sustainable Development Goals

## MOBILE-ENABLED SERVICES

### IMPROVING EDUCATION

1.2bn
2017

1.4bn
2018

mobile subscribers

25% → 28%
2017          2018
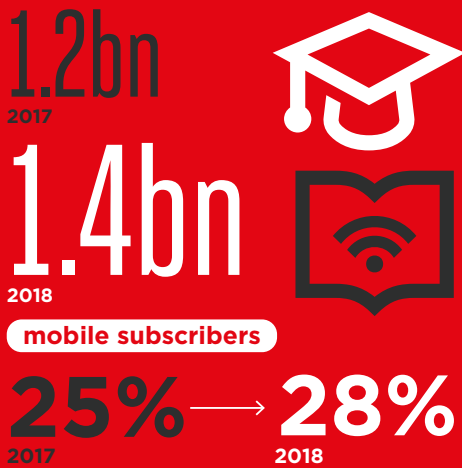
### IMPROVING / MONITORING HEALTH

1bn
2017

1.3bn
2018

mobile subscribers

21% → 26%
2017          2018

### PURCHASING GOODS

1.8bn
2017

1.9bn
2018

mobile subscribers

36% → 39%
2017          2018

### READING NEWS

2.5bn
2017

2.7bn
2018

mobile subscribers

52% → 56%
2017          2018
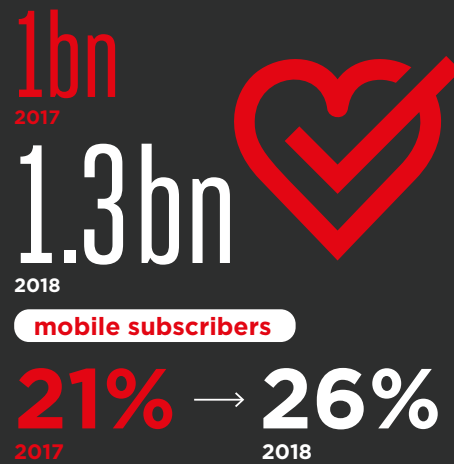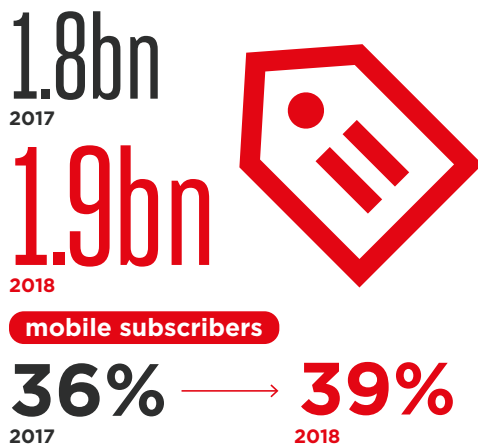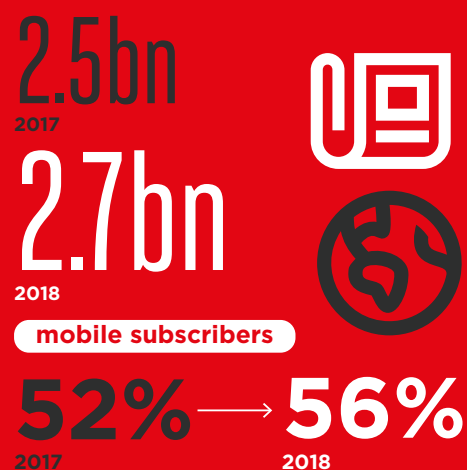
### CELLULAR IOT CONNECTIONS

673m → 1.2bn
2017          2018

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Key findings

## Mobile technology acts as a platform for innovation and sustainable development

### GREATER CONNECTIVITY HAS INCREASED THE INDUSTRY'S IMPACT ACROSS ALL 17 SDGS

**400m**

**people have started using mobile**

Since 2015, **400 million** people have started using mobile, bringing global penetration to **66%**. More than **850 million** people have started using mobile internet, bringing global penetration to **47%**.

### USE OF MOBILE-ENABLED SERVICES HAS INCREASED

**This is the other main driver behind the industry's increased impact.** For example, **1.9 billion** mobile subscribers use their phone to purchase goods and services – an increase of **160 million** since 2017. Some **1.3 billion** subscribers use mobile health services – an increase of **230 million** since 2017.

### SDG 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE REMAINS THE HIGHEST IMPACTED GOAL

**HIGHEST IMPACT**

**9 INDUSTRY, INNOVATION AND INFRASTRUCTURE**

**3G**
**90% global coverage**

**4G**
**79% global coverage**
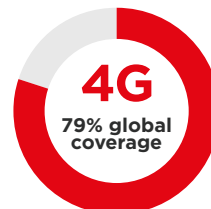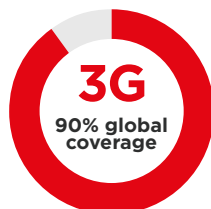
Since 2015, an additional **900 million** people have been covered by a 3G network, which now stands at **90%** global coverage. An additional **2.2 billion** have been covered by a 4G network, which now stands at almost **80%** global coverage. This reflects the role of mobile networks in providing critical infrastructure that spurs inclusive and sustainable development, in addition to greater innovation.

**Introduction and key findings**    **Industry Impact on the SDGs**    **Mobile and climate change**    **Accelerating Impact**    **11**

2019 Mobile Industry Impact Report: Sustainable Development Goals

## MORE TO BE DONE

Despite its achievements, the mobile industry is not on track to deliver **the full potential of mobile's contribution to the SDGs by 2030**. SDG 9 remains the only SDG where mobile has reached more than half its potential impact. Improvements in other SDGs are not enough. **Faster adoption of mobile technology and enabling life-enhancing services can help to maximise the full contribution of mobile to deliver all 17 SDGs**.

## THE INDUSTRY ACHIEVED ITS MOST IMPROVED IMPACT ON SDG 4: QUALITY EDUCATION

**MOST IMPROVED**

This is also the second highest impacted Goal, with **1.4 billion** mobile subscribers using their phone to improve their education or that of their children – an increase of **140 million** users since 2017.

**4 QUALITY EDUCATION**

## 1.4bn

use their phone to **improve their education** or that of their children

## DIGITAL INCLUSION

**Addressing barriers to digital inclusion will accelerate the industry's impact on the SDGs.** Affordability, low levels of literacy and digital skills, a lack of relevance, and safety and security concerns are the biggest barriers to mobile internet use from consumers' point of view.

## ACCELERATING IOT DEPLOYMENT

# 9.1bn 2018

**IoT connections worldwide**

**Accelerating IoT deployment is critical to maximise the industry's impact on the SDGs.** IoT connections increased by 1.5 billion in 2018, reaching 9.1 billion worldwide. Nevertheless, the majority of IoT deployments remain small or medium scale as the market is in its early stages. Scaling IoT solutions such as smart cities, smart homes and smart manufacturing will be crucial to achieving the SDGs.

## IMPROVING ENERGY EFFICIENCY

Operators are striving to minimise their own climate impact by improving energy efficiency, sourcing renewable energy, and working with stakeholders to decrease value chain emissions.

**13 CLIMATE ACTION**

## GREENHOUSE GAS EMISSIONS

**Many mobile operators avoid more greenhouse gas (GHG) emissions than they generate, by enabling other sectors of the economy to reduce their GHG emissions.** This is through providing the connectivity for digital solutions that reduce energy use, reduce travel and transport, or otherwise reduce GHG emissions.

**Introduction and key findings**    **Industry Impact on the SDGs**    **Mobile and climate change**    **Accelerating Impact**    **13**

2019 Mobile Industry Impact Report: Sustainable Development Goals

## COLLABORATION IS KEY

**17 PARTNERSHIPS FOR THE GOALS**

**Collaboration and multi-stakeholder partnerships are essential to achieve the SDGs.** Partnerships with the public sector, NGOs and other industries underpin our potential to achieve the Goals by 2030.

## OPERATING RESPONSIBLY

Accelerating connectivity and operating responsibly must go hand-in-hand for the industry to maximise its impact. Operating responsibly – that is, understanding and responding to the social, environmental and ethical issues relevant to operators and their stakeholders – supports sustainable development.

# 02

# The mobile industry's impact on the SDGs

2019 Mobile Industry Impact Report: Sustainable Development Goals

The mobile industry connects more than 5 billion individuals, providing access to essential communications and life-enhancing services. This unrivalled reach and impact on daily routines highlights the cross-cutting role of mobile, as new user-centric solutions and business models transform multiple industries and societies around the globe. As a result, the industry plays a leading role in several development areas, including reducing poverty, improving healthcare and education, and driving sustainable economic growth.

The importance of mobile technology is reflected in the SDGs, with several Targets calling for increased access and enhanced use of ICT, especially mobile.[1] However, mobile ultimately has the potential to drive progress across all 17 Goals. The 2018 Mobile Industry Impact Report showed that countries with higher levels of mobile connectivity had made the most progress in meeting their commitments to the SDGs.[2] The impact of mobile technology on sustainable development has also been demonstrated by a burgeoning body of evidence.
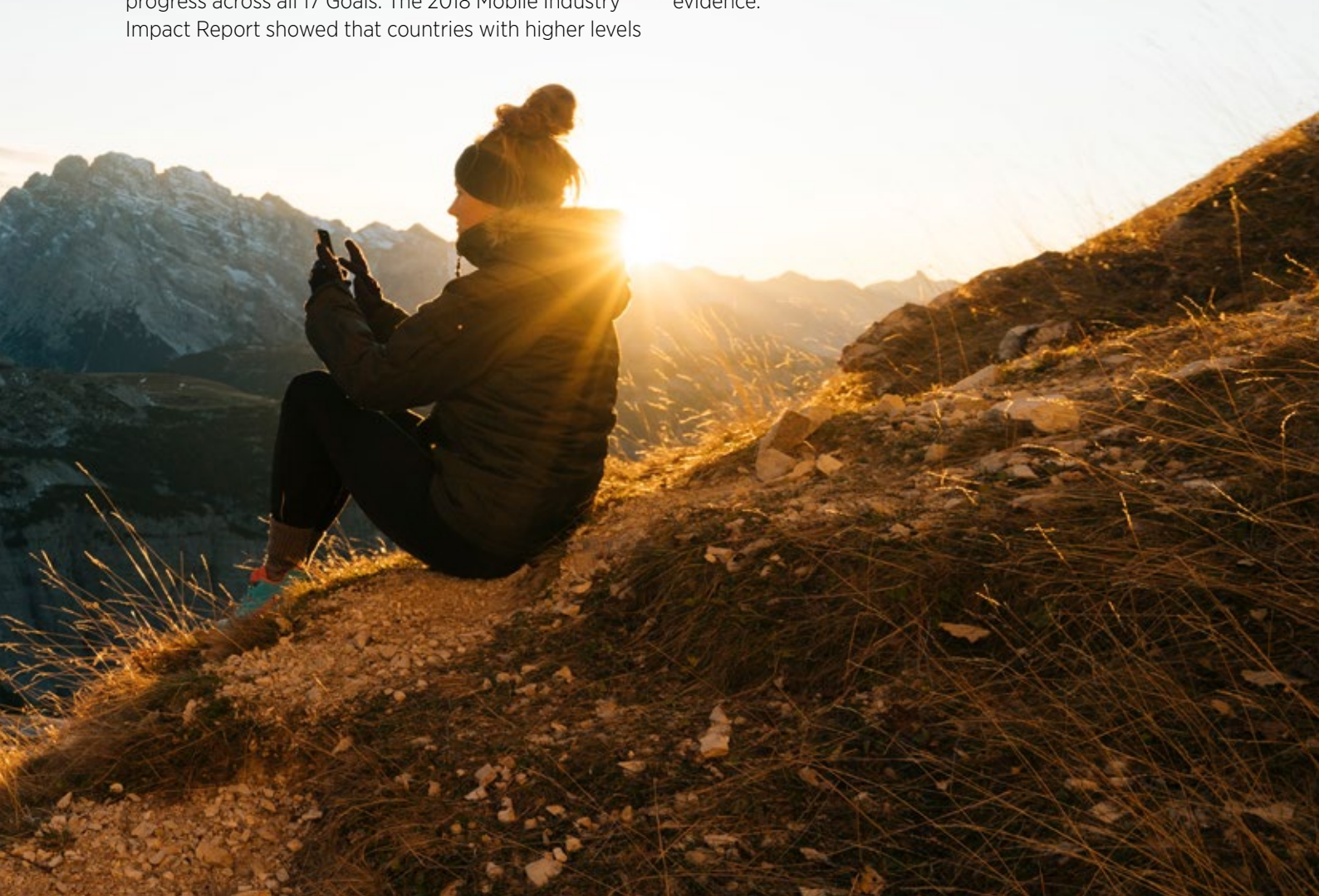
1. See UN SDGs, for example Targets 4.4, 5B, 8.10, 9C and 17.8.
2. 2018 Mobile Industry Impact Report: Sustainable Development Goals, GSMA, 2018

# Mobile and sustainable development: What does the evidence show?

## PERSONAL WELL-BEING

Mobile ownership combined with internet connectivity is associated with an improvement in peoples' lives and well-being.[3]

## HEALTH

Mobile nutrition and health services improve users' knowledge, behaviours and health outcomes.[6]

## POVERTY AND RURAL DEVELOPMENT

Mobile (and particularly mobile money) can drive reductions in poverty, improve rural livelihoods[7] and help users mitigate the impact of emergencies and external shocks.[8]

## ECONOMIC GROWTH

**4.6%**

The mobile industry contributes **$3.9 trillion (4.6%)** to global GDP, driven by direct impacts as well as wider productivity effects in other sectors.[4]

## EMPOWERING WOMEN

**80%**

**80%** of adult women in low- and middle-income countries now own a mobile phone, which can help them feel safer and more connected, and provide access to information, services and life-enhancing opportunities.[9]

## EDUCATION

Mobile improves the quality of teaching and learning, and facilitates reading and enhanced literacy.[5]

3.    See The Impact of Mobile on People's Happiness and Well-Being, GSMA and Gallup, 2018, and Mobile Connectivity in Emerging Economies, Pew Research Center, 2019
4.    See The Mobile Economy 2019, GSMA, 2019, and The economic contribution of broadband digitization and ICT regulation, Katz and Callord, 2018
5.    See The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis Sung et al, 2016, and Reading in the mobile era, Unesco, 2014
6.    See Mobile App-Based Health Promotion Programs: A Systemic Review of the Literature, Lee et al, 2018, and Creating mobile health solutions for behaviour change, GSMA, 2018
7.    See for example The long-run poverty and gender impacts of mobile money, Suri and Jack, 2016, and Mobile Phones and Economic Development in Rural Peru, Beuermann et al, 2012
8.    See for example Does Mobile Money Affect Saving Behaviour? Evidence from a Developing Country, Ky et al, 2017, and Mobile money and risk sharing against village shocks, Riley, 2018
9.    See The Mobile Gender Gap Report, GSMA, 2019, and Bridging the gender gap: Mobile access and usage in low- and middle-income countries, GSMA, 2015

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

17

2019 Mobile Industry Impact Report: Sustainable Development Goals

## FINANCIAL INCLUSION

Mobile money has helped reduce the financial exclusion gap in low- and middle-income countries, with **866 million** registered accounts at the end of 2018.[10] In Sub-Saharan Africa, more than one in 10 adults rely on mobile money to access financial services.[11]

**866m registered accounts**

## DIGITAL IDENTITY

Operators have enabled accessible and inclusive digital identity by extending birth registration through mobile, partnering with governments on enrolment in national ID programmes and verifying and authenticating identification digitally.[12]

## ACCESS TO UTILITIES

**2 million solar home systems**

Mobile technology has unlocked new and innovative models to access energy, particularly pay-as-you-go (PAYG) solar companies, which have cumulatively sold more than **2 million** solar home systems. The PAYG model is being replicated in other sectors such as water, irrigation, clean cooking and sanitation.[13]

## HUMANITARIAN ASSISTANCE

The ability to use mobile phones to communicate and access information, education, financial and health services in emergency situations – as well as facilitate the provision of aid – is now widely recognised as an essential form of humanitarian assistance.[14]

## ENVIRONMENT AND CLIMATE CHANGE

Many mobile operators avoid more greenhouse gas (GHG) emissions than they generate, through their ability to enable other sectors of the economy to reduce their GHG emissions.

10. State of the Industry Report on Mobile Money 2018, GSMA, 2019
11. The Global Findex Database 2017: Measuring the Financial Inclusion and Fintech Revolution Demirguc-Kunt et al, 2018
12. See for example 2018 Mobile Industry Impact Report: Sustainable Development Goals, GSMA, 2018, and Digital Identification: A key to inclusive growth, McKinsey, 2019, as well as several case studies on the GSMA M4D Digital Identity programme website.
13. See for example Mobile for Development Utilities Annual Report, GSMA, 2019
14. See for example Mobile for Humanitarian Innovation, Annual Report, GSMA, 2019, and GSMA Humanitarian Connectivity Charter Annual Report, GSMA, 2017

2019 Mobile Industry Impact Report: Sustainable Development Goals

## 2.1
# Measuring SDG Impact

Transparency and trust are more important today than ever before. As part of the industry commitment to the SDGs, the GSMA annually measures and publishes the mobile industry's impact on the SDGs.

The impact scores are underpinned by two enablers: connectivity and sustainable business practices.

**Figure 2**

**The two impact enablers**

Operators deploy networks to connect the unconnected and facilitate access to mobile-enabled services. Connectivity can be broken down into three parts:

**Connectivity**
(Consumers/businesses)

Providing connectivity drives the industry's impact on the SDGs

**Coverage:** Deploying mobile networks provides the foundation for mobile connectivity.

**Adoption:** With coverage in place, individuals and enterprises can use voice, SMS and data services. Mobile networks also enable the adoption of IoT solutions.

**Usage:** Mobile provides a platform for users to access a range of life-enhancing services beyond communications, from digital finance to health to clean energy.

**Operating responsibly**
(Underpinned by sustainable business practices)

How operators incorporate sustainability into their business activity influences the SDGs

Operators have significant direct impacts, both positive and negative, on the SDGs through the environmental and social performance of their operations.

**Operating responsibly:** One pillar of the GSMA Sustainability Assessment Framework[15] 'Operating Responsibly' captures operator management and performance on key social, ethical and environmental sustainability issues within their own operations and value chains (see Section 2.4 for further analysis).

15.    Incorporating Sustainability and the SDGs into Core Business, GSMA, 2018

**Introduction and key findings**   **Industry Impact on the SDGs**   **Mobile and climate change**   **Accelerating Impact**   **19**

2019 Mobile Industry Impact Report: Sustainable Development Goals

# SDG Impact score methodology

The GSMA has developed a methodology to measure the impact of the mobile industry across all 17 SDGs. For each Goal, an 'impact score' is calculated out of 100. A score of 0 means the industry is having no impact at all, while a score of 100 means the industry is doing everything possible to contribute to that SDG. For example, SDG 1 currently scores 39, meaning the industry is achieving 39% of what it could potentially contribute to that SDG.

The methodology used to construct the impact scores is summarised below, with a more detailed description provided in the SDG Impact Methodology document.[16]

| **1** | **2** | **3** | **4** |
|---|---|---|---|
| **Review impact evidence** | **Driver identification** | **Metric selection** | **SDG impact scores** |
| Review empirical and qualitative evidence on how mobile technology has impacted sustainable development | Identify the relevant industry activities and services that contribute to each of the 17 SDGs | Select appropriate metrics to quantify the drivers | Normalise metrics and aggregate to generate mobile industry impact scores for each SDG (ranging from 0-100) |

## The industry's impact increased across all 17 SDGs in 2018, but it is not on track to maximise impact by 2030. It is currently achieving 41% of its potential impact on the SDGs.

As in previous years, the industry's greatest influence is on SDG 9: Industry, Innovation and Infrastructure, with mobile currently achieving almost 60% of its potential impact. At the end of 2018, mobile broadband networks covered 90% of the world's population and 66% of the population subscribed to a mobile service. This reflects the role of mobile networks in providing critical infrastructure that spurs inclusive and sustainable industrialisation, in addition to greater innovation.

The industry enhanced its impact across all SDGs in 2018, with significant progress on SDG 4: Quality Education and SDG 6: Clean Water and Sanitation. These improvements were particularly strong in developing countries, where an increasing proportion of users are accessing educational information, as well as basic services such as utilities, via mobile (see Section 2.3).

Despite this progress, SDG 9: Industry, Innovation and Infrastructure is the only SDG where mobile has reached over half of its potential impact. Greater support from public and private stakeholders is needed for the industry to achieve its maximum impact by 2030. Throughout the rest of this chapter, we identify several calls to action for the mobile industry as well as other stakeholders (including governments, international organisations and other sectors) to accelerate impact.

---

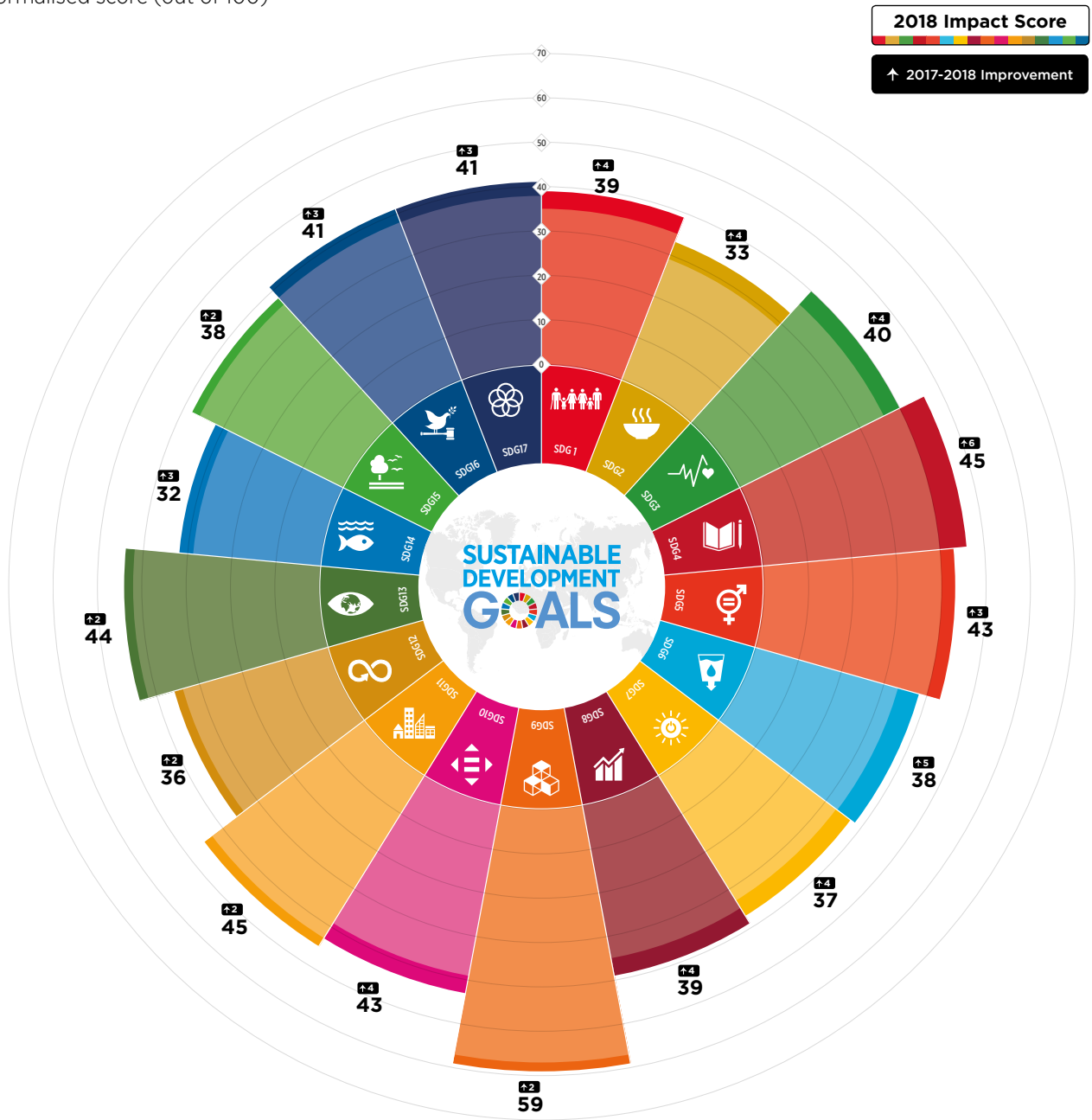16.    2019 Mobile Industry Impact Report: Sustainable Development Goals - Methodology, GSMA, 2019

20

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

#BetterFuture

**Figure 3**

## SDG mobile impact scores
Normalised score (out of 100)



2018 Impact Score

↑ 2017-2018 Improvement

SDG1 ↑4 39
SDG2 ↑4 33
SDG3 ↑4 40
SDG4 ↑6 45
SDG5 ↑3 43
SDG6 ↑5 38
SDG7 ↑4 37
SDG8 ↑4 39
SDG9 ↑2 59
SDG10 ↑4 43
SDG11 ↑2 45
SDG12 ↑2 36
SDG13 ↑2 44
SDG14 ↑3 32
SDG15 ↑2 38
SDG16 ↑3 41
SDG17 ↑3 41

1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Regional differences in SDG impacts

**Figure 4**

**SDG impact scores rank and improvement rank by region, 2018**



**North America**

| | |
|---|---|
| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE — 10 REDUCED INEQUALITIES |
| LOWEST | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION |
| MOST IMPROVED | 13 CLIMATE ACTION |
| LEAST IMPROVED | 14 LIFE BELOW WATER |

**Europe**

| | |
|---|---|
| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE — 10 REDUCED INEQUALITIES |
| LOWEST | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION |
| MOST IMPROVED | 3 GOOD HEALTH AND WELL-BEING |
| LEAST IMPROVED | 15 LIFE ON LAND |

**Latin America**

| | |
|---|---|
| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE — 4 QUALITY EDUCATION |
| LOWEST | 14 LIFE BELOW WATER |
| MOST IMPROVED | 4 QUALITY EDUCATION |
| LEAST IMPROVED | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION |

**Introduction and key findings**   **Industry Impact on the SDGs**   **Mobile and climate change**   **Accelerating Impact**   **23**

2019 Mobile Industry Impact Report: Sustainable Development Goals

**CIS**

| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 4 QUALITY EDUCATION |
| LOWEST | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION | |
| MOST IMPROVED | 6 CLEAN WATER AND SANITATION | |
| LEAST IMPROVED | 5 GENDER EQUALITY | |

**MENA**

| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 13 CLIMATE ACTION |
| LOWEST | 14 LIFE BELOW WATER | |
| MOST IMPROVED | 3 GOOD HEALTH AND WELL-BEING | |
| LEAST IMPROVED | 14 LIFE BELOW WATER | |

**Asia-Pacific**

| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 11 SUSTAINABLE CITIES AND COMMUNITIES |
| LOWEST | 2 ZERO HUNGER | |
| MOST IMPROVED | 4 QUALITY EDUCATION | |
| LEAST IMPROVED | 11 SUSTAINABLE CITIES AND COMMUNITIES | |

**Sub-Saharan Africa**

| HIGHEST | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 11 SUSTAINABLE CITIES AND COMMUNITIES |
| LOWEST | 14 LIFE BELOW WATER | |
| MOST IMPROVED | 6 CLEAN WATER AND SANITATION | |
| LEAST IMPROVED | 5 GENDER EQUALITY | |

2019 Mobile Industry Impact Report: Sustainable Development Goals

## Asia-Pacific

**Most impacted SDG:** 9 11 13

**Most improved SDG:** 4 6 1

Increased usage of mobile to view educational resources, read the news and access government services drives literacy rates.

Growth in the adoption of mobile financial services in the region promotes financial inclusion and economic empowerment.

| | | 2017 | 2018 | 2017 | 2018 |
|---|---|---|---|---|---|
| Use mobile to improve education | → | 510 million | 630 million | 19% | 24% |
| Use mobile to read the news | → | 1.2 billion | 1.4 billion | 47% | 54% |
| Use mobile to access government services | → | 350 million | 470 million | 13% | 18% |
| Use mobile financial services | → | 650 million | 750 million | 25% | 29% |

## Commonwealth of Independent States (CIS)

**Most impacted SDG:** 9 4 10

**Most improved SDG:** 6 3 4

Increased cellular IoT utility connections enable companies to better understand and maintain their infrastructure network, reducing waste and improving efficiency

Consumers are increasingly using phones to improve their health or that of their family through mobile health applications.

| | | 2017 | 2018 |
|---|---|---|---|
| IoT utility connections | → | 21 million | 27 million |
| Use mobile to monitor health | → | 60 million | 80 million |

## Europe

**Most impacted SDG:** 9 10 4

**Most improved SDG:** 3 2 4

Mobile operators continue to improve the quality of their infrastructure through network upgrades, with high levels of coverage already achieved.

More individuals are monitoring their health through wearable devices, such as fitness trackers.

| | | 2017 | 2018 |
|---|---|---|---|
| Download speeds | → | 23 Mbps | 25 Mbps |
| Upload speeds | → | 8 Mbps | 9 Mbps |
| IoT wearable connections | → | 62 million | 79 million |

## Latin America

**Most impacted SDG:** 9 4 5

**Most improved SDG:** 4 2 3

Operators have played an important role in improving gender equality through their operational activities and industry collaboration, such as the We Care campaign.

Increased take-up and use among subscribers of life-enhancing services, such as mobile education and health applications.

| | | 2017 | 2018 | 2017 | 2018 |
|---|---|---|---|---|---|
| Use mobile to improve education | → | 130 million | 180 million | 32% | 41% |
| Use mobile to monitor health | → | 90 million | 130 million | 21% | 30% |

## Middle East & North Africa (MENA)

**Most impacted SDG:** 9 13 11

**Most improved SDG:** 3 4 6

The deployment of IoT solutions to enable smart cities and smart vehicles reduces the adverse environmental impact of cities.

Improvements to the quality and resilience of networks enable operators to maintain communications services in disaster-stricken areas.

| | **2017** | **2018** |
|---|---|---|
| **IoT smart building connections** | 50 million | 59 million |
| **IoT smart cities connections** | 16 million | 21 million |

## North America

**Most impacted SDG:** 9 10 14

**Most improved SDG:** 13 12 11

Operators are increasingly putting in place the management systems, metrics and controls to improve performance with respect to climate change mitigation.

Improved IoT take-up drives the efficient use of resources in industry, such as smart manufacturing and smart utilities.

| | **2017** | **2018** |
|---|---|---|
| **IoT smart manufacturing connections** | 23 million | 32 million |
| **IoT smart utility connections** | 116 million | 135 million |

## Sub-Saharan Africa

**Most impacted SDG:** 9 11 16

**Most improved SDG:** 6 7 9

Expansion in network coverage provides more individuals with a tool to communicate and a platform to access transformative services.

Rising mobile and mobile money adoption fuels the popularity of mobile-enabled solar pay-as-you-go solutions, which enable access to clean energy.

| | **2017** | **2018** | **2017** | **2018** |
|---|---|---|---|---|
| **3G coverage** | 630 million | 720 million | 63% | 70% |
| **Mobile internet adoption** | 200 million | 240 million | 21% | 24% |
| **Use mobile financial services** | 120 million | 150 million | 28% | 32% |

2019 Mobile Industry Impact Report: Sustainable Development Goals

## 2.2
## Connectivity underpins the industry's contribution to the SDGs

Extensive network coverage underpins mobile's contribution to SDG 9: Industry, Innovation and Infrastructure. However, the rural-urban coverage gap remains significant in low-income countries.

Network coverage is a key driver of SDG 9. With 6.8 billion people covered by mobile broadband networks, the industry's impact score is higher for this SDG than any other. Mobile operators have invested heavily in deploying mobile broadband networks to connect the unconnected. Figure 5 shows that between 2015 and 2018, 3G population coverage increased from 81% to 90% (equivalent to 900 million additional people covered), while 4G population coverage grew from 53% to almost 80% (equivalent to 2 billion additional people covered).

A key challenge will be to deploy networks to the final 10% of the population still lacking 3G or 4G coverage. These tend to be in remote areas of low-income countries, where it can cost up to twice as much to deploy and three times more expensive to run new base stations. Furthermore, average revenues can be ten times lower than an urban deployment, highlighting the economic challenge facing operators.[17]

In low-income countries,[18] more than half of rural populations are not covered by 3G or 4G networks.[19]

17.    Enabling Rural Coverage, GSMA, 2018
18.    This categorisation is based on the World Bank's country classification and includes countries the World Bank classifies as low-income (but not lower-middle income or upper-middle income).
19.    The State of Mobile Internet Connectivity 2019, GSMA, 2019

**Figure 5**

Source: GSMA Intelligence

## Mobile broadband coverage

% of population covered.  *Base: Total population*
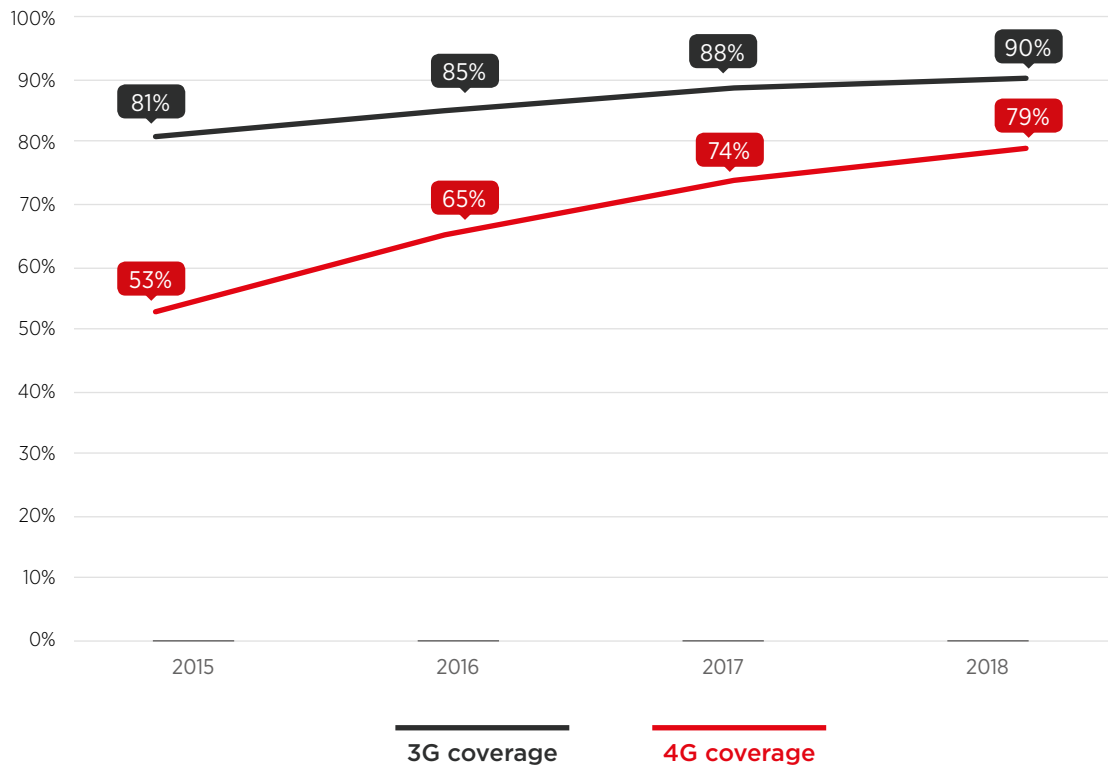


Coverage data is sourced from GSMA Intelligence, combining data reported by mobile operators and national regulatory authorities. Mobile adoption data is sourced from GSMA Intelligence, combining data reported by mobile operators with the annual GSMA Intelligence Consumer Survey.

# Tackling the coverage gap

To unlock the investment required to close the coverage gap and deliver connectivity, there needs to be continued focus to reduce the cost of network deployment, lower the perceived investment risks, and increase the expected return on investment. This will require the following:

**Technology innovations in mobile broadband infrastructure** to improve the commercial viability of rural infrastructure rollout.[20] In addition, smart investment tools, such as the Mobile Coverage Maps developed by the GSMA,[21] can help ensure investment efficiency and optimise the deployment of rural infrastructure.

Governments and regulators need to provide the best possible enabling environment by ensuring **pro-investment and pro-innovation policies** that reduce costs and uncertainty around spectrum allocation and assignments, remove obstacles to network deployment, and adopt international best practices on tax policy.[22]

## Rising mobile and mobile internet adoption drive improvements for all SDG impact scores

By the end of 2018, 5.1 billion people (two thirds of the global population) were using a mobile phone, an increase of 130 million people compared to 2017 and 515 million since 2015 (see Figure 6). Furthermore, 3.5 billion people (47% of the global population) used the mobile internet, an increase of 300 million people compared to 2017 and 865 million since 2015.

Mobile adoption and mobile internet adoption impact all the SDGs and are the main reason why the industry's impact increased across the board. For example, mobile adoption accelerates economic growth, driving the industry's contribution to SDG 1: No Poverty and SDG 8: Decent Work and Economic Growth. Mobile allows users to access information and services (education, health, finance, utilities, e-government) and enables social and political inclusion (for example, through social media and accessing the news), which ultimately impacts every SDG. It even impacts SDG 15: Life on Land through enabling communication and information to support conservation initiatives, and SDG 17: Partnerships for the Goals, as rising mobile adoption accelerates capacity building in developing economies.

20.   Closing the Coverage Gap: How Innovation can Drive Rural Connectivity, GSMA, 2019
21.   GSMA Mobile Coverage Maps: https://www.mobilecoveragemaps.com/
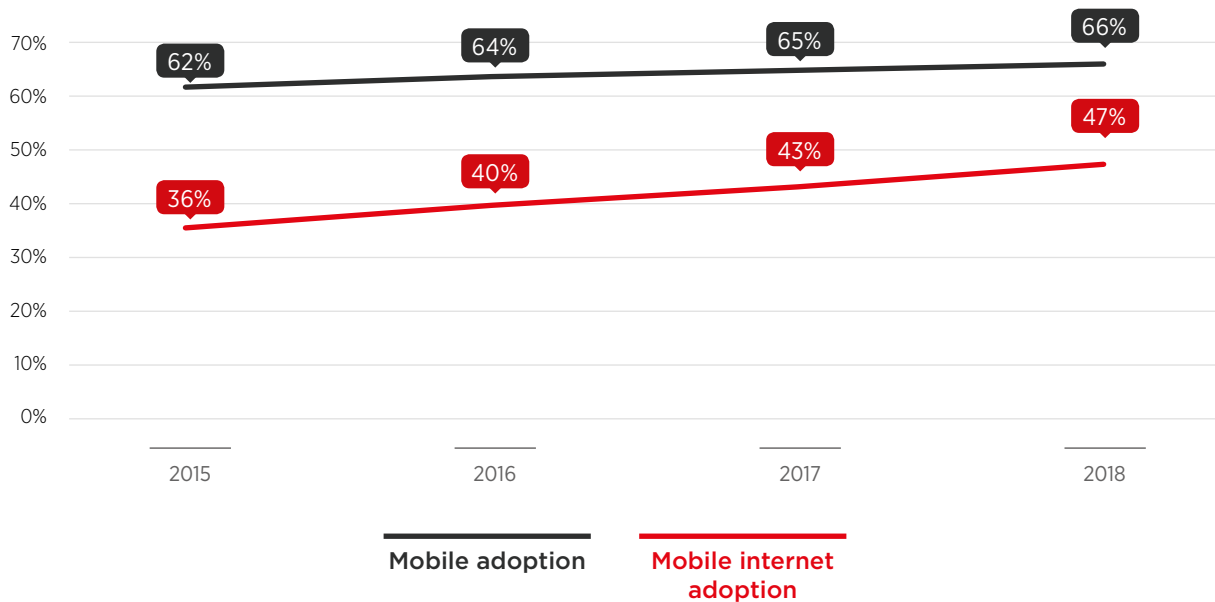22.   For more detailed recommendations, see Enabling Rural Coverage, GSMA, 2018

In 2018 the world passed a critical milestone. For the first time, more than half the global population (51%) were using the internet.[23] Mobile plays a particularly integral role in countries that lack fixed network infrastructure, as it is often the only way to access the internet.

**Figure 6**

Source: GSMA Intelligence

## Mobile and mobile internet adoption

% of population connected. *Base: Total population*

Mobile adoption — 62%, 64%, 65%, 66%
Mobile internet adoption — 36%, 40%, 43%, 47%

— **Mobile adoption**     — **Mobile internet adoption**

*Coverage data is sourced from GSMA Intelligence, combining data reported by mobile operators and national regulatory authorities. Mobile adoption data is sourced from GSMA Intelligence, combining data reported by mobile operators with the annual GSMA Intelligence Consumer Survey.*

23.   Measuring the Information Society Report, ITU, 2018

2019 Mobile Industry Impact Report: Sustainable Development Goals

In the 18 low- and middle-income countries (LMICs) surveyed by the GSMA Intelligence Consumer Survey in 2018,[24] an average of 57% of respondents who had used the internet in the previous three months accessed it exclusively on a mobile phone. This reliance on mobile for internet was even higher in certain countries and regions – for example, in South Asia[25] the average was 75%. This highlights the importance of mobile as one of the primary platforms for accessing the internet.

## The industry continues to support underserved populations
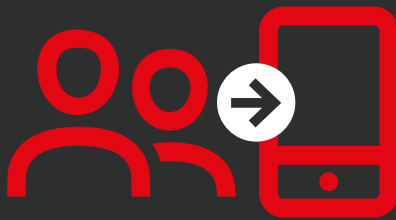
### Mobile adoption

Mobile adoption increased from **52%** to **58%** among the poorest **40%** between 2015 and 2018 (equivalent to **190 million** new subscribers).[26]

**1 NO POVERTY**

**10 REDUCED INEQUALITIES**

### 4% improvement

This helped to improve the industry's impact scores for **SDG 1: No Poverty** and **SDG 10: Reduced Inequalities**, which both increased by four percentage points.

### Empowering women

The industry continues to make a strong contribution to helping empower women by making them feel safer and more connected, and providing access to information, services and life-enhancing opportunities. In 2018, more than **1.7 billion** adult women owned a mobile phone in LMICs, an increase of **250 million** since 2014.[27]

**5 GENDER EQUALITY**

**10 REDUCED INEQUALITIES**

### Female take-up

Female take-up affects **SDG 5: Gender Equality** (the sixth most impacted SDG) in addition to **SDG 10: Reduced inequalities** (the fifth most impacted SDG).

---

24. The 2018 GSMA Intelligence Consumer Survey included 18 LMICs, accounting for 70% of LMIC population. Respondents were asked, "Have you ever used the internet on a mobile phone? Please think about all the different ways of using the internet on a mobile phone" and "Thinking about devices other than a mobile phone, have you ever used the internet on a computer, laptop or tablet?"
25. This included Bangladesh, India and Pakistan.
26. This calculation of mobile penetration takes into account the poorest 40% of population in each country
27. The Mobile Gender Gap Report, GSMA, 2019

2019 Mobile Industry Impact Report: Sustainable Development Goals



# Connecting the next half of the world to the internet will be much more challenging

Despite progress, mobile connectivity growth has been unequal, especially mobile internet. Figure 7 shows that while more than three quarters of the population are connected in North America and Europe, only one quarter are connected in Sub-Saharan Africa and less than half are connected in Asia-Pacific and MENA. Unless current trends are accelerated, 40% of the world's population will still be unconnected to the mobile internet in 2025.[28] This threatens to limit the industry's contribution to achieving the SDGs compared to its potential.

The unconnected can be split into two distinct groups – those not covered, and those covered but not using. The uncovered are populations with no access to mobile broadband network coverage[29] (the '**coverage gap**'). Those covered but not using are populations who live within the footprint of a mobile broadband network but are not using mobile internet services (the '**usage gap**'). The fact that the usage gap (3.3 billion) is more than four times larger than the coverage gap (750 million) highlights the importance of factors other than coverage that are stopping people from adopting mobile internet, particularly around literacy and digital skills, affordability, relevance and safety and security.[30]

Enabling access for the 4 billion people that are currently unconnected will also be more challenging as they tend to belong to the most marginalised groups and are disproportionately rural, female, illiterate and older. For example, in low- and middle-income countries, rural populations are 40% less likely to use mobile internet than urban users, and women are 23% less likely to use mobile internet than men.[31]

---

28. GSMA Intelligence, World Bank
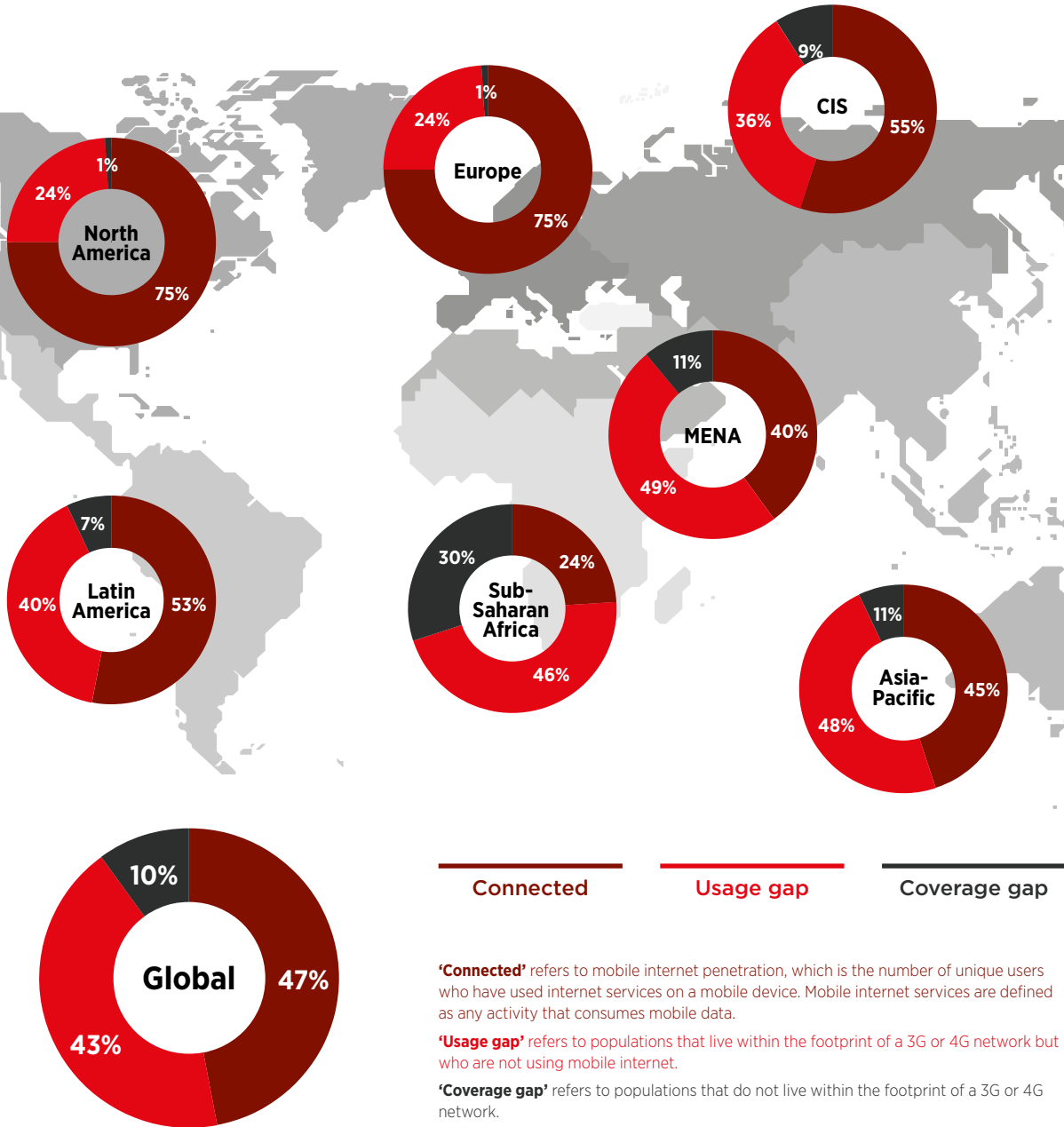29. We define "mobile broadband" as 3G and 4G technologies.
30. The State of Mobile Internet Connectivity 2019, GSMA, 2019
31. These are the factors that GSMA research has identified to be the most important barriers to using the mobile internet. See The State of Mobile Internet Connectivity 2019, GSMA, 2019

2019 Mobile Industry Impact Report: Sustainable Development Goals

## Mobile internet connectivity, 2018



**North America**
- 1%
- 24%
- 75%

**Europe**
- 1%
- 24%
- 75%

**CIS**
- 9%
- 36%
- 55%

**Latin America**
- 7%
- 40%
- 53%

**Sub-Saharan Africa**
- 30%
- 24%
- 46%

**MENA**
- 11%
- 40%
- 49%

**Asia-Pacific**
- 11%
- 45%
- 48%

**Global**
- 10%
- 47%
- 43%

Connected — Usage gap — Coverage gap

**'Connected'** refers to mobile internet penetration, which is the number of unique users who have used internet services on a mobile device. Mobile internet services are defined as any activity that consumes mobile data.

**'Usage gap'** refers to populations that live within the footprint of a 3G or 4G network but who are not using mobile internet.

**'Coverage gap'** refers to populations that do not live within the footprint of a 3G or 4G network.

Unique subscriber data is sourced from GSMA Intelligence, combining data reported by mobile operators with the annual GSMA Intelligence Consumer Survey. Coverage data is sourced from GSMA Intelligence, combining data reported by mobile operators and national regulatory authorities. Population data is sourced from the World Bank.

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

33

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Tackling the usage gap and driving mobile internet adoption

Driving mobile internet usage will require strategies that address local barriers to internet use, as well as the specific issues that women, rural users and other underserved communities might face.

Sustained efforts are required to increase awareness and understanding of mobile internet. Addressing barriers around affordability, relevance, lack of skills, and safety/security concerns will require coordinated action between all stakeholders. There is a need to do the following:

- Improve the affordability of internet-enabled devices and data for consumers. This can include reducing the cost of data and devices, supporting appropriate financing options for devices, and reviewing sector-specific taxes that affect the affordability of mobile internet.

- Increase awareness and understanding of mobile internet. This can include awareness campaigns highlighting the benefits that mobile internet can offer, as well as the promotion of relevant content and services to drive mobile internet uptake and usage.

- Improve digital skills and confidence to be able to use the internet.[32] This can include embedding mobile internet skills training in education and training initiatives; designing internet-enabled handsets and content and services for less literate/confident users; and addressing safety and security concerns.

## Enabling the SDGs requires high-quality and resilient networks as well as coverage and connectivity

In addition to expanding mobile coverage and driving adoption of mobile and mobile internet services, operators are investing in better quality networks. As shown in Figure 8, average download and upload speeds have increased by over 50% since 2015, while latencies halved during the period. Improvements to network qua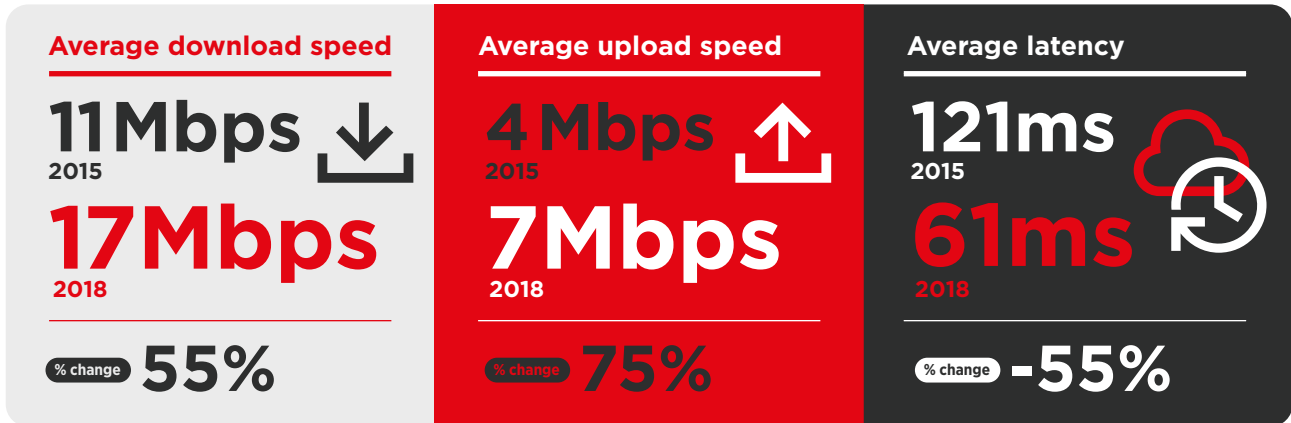lity and resilience impact many SDGs but are particularly important in maintaining communications services in disaster-stricken areas, which is a key component of SDG 11: Sustainable Cities and Communities and 13: Climate Action.[33] These Goals sit third and fourth respectively when ranking the mobile industry's impact.

---

32. See for example the GSMA's Mobile Internet Skills Training Toolkit (MISTT)
33. These are particularly relevant to: Target 11.5, which calls for a substantial decrease in the direct economic losses caused by disasters; and Target 13.1, which calls for strengthened resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

34

**Introduction
and key findings**

**Industry Impact
on the SDGs**

**Mobile and
climate change**

**Accelerating
Impact**

2019 Mobile Industry Impact Report: Sustainable Development Goals

**Figure 8**

Source: GSMA Intelligence calculations of data provided by Ookla® Speedtest Intelligence®.

## Network quality

**Average download speed**

**11 Mbps**
2015

**17 Mbps**
2018

% change **55%**

**Average upload speed**

**4 Mbps**
2015

**7 Mbps**
2018

% change **75%**

**Average latency**

**121 ms**
2015

**61 ms**
2018

% change **-55%**

*For each country, an 'average download' speed was provided for 3G and 4G technologies, which represents the average speed experienced by Speedtest users running tests in a given year. For each country, we took a weighted average of 3G and 4G download speeds, with weights determined by the proportion of mobile broadband connections that are 3G and 4G respectively. Global averages were calculated by taking a weighted average of speeds and latencies, with subscribers used as weights.*

The industry also supports SDGs 11 and 13 through the Humanitarian Connectivity Charter (HCC), a set of principles adopted by operators to assist affected populations in disasters. Now in its fourth year, the HCC highlights the importance of SDG 17: Partnerships for the Goals and how such partnerships can be leveraged to enhance the industry's impact. The HCC provides a support system for the mobile industry, governments, NGOs and the international humanitarian community to respond effectively to disasters.

For instance, signatories of the charter collaborate to scale and standardise preparedness and response activities to enable a more predictable response to crisis and disaster. By the end of 2018, 155 operators from 108 countries had committed to the HCC's principles and 77% of signatories had taken part in national disaster preparedness initiatives (a 14% increase on 2017).[34]

---

34.  Mobile for Humanitarian Innovation Annual Report, GSMA, 2019

2019 Mobile Industry Impact Report: Sustainable Development Goals

🔍 **CASE STUDY**

## Mobile operators work together following typhoon Ompong in the Philippines

**Typhoon Ompong (international name: Mangkhut) was one of the most powerful storms to hit the Philippines in decades, causing floods and landslides that killed dozens of people, damaging agriculture and toppling communication lines.**

In the aftermath of the event, Smart Communications worked with Vodafone Foundation to provide support to people in affected areas. Together, the two mobile operators deployed Vodafone's portable Instant Wi-Fi solution, enabling free internet access for 1,500 users across an area up to 10,000 square metres. They also set up an Instant Charge station, which could charge up to 66 phones simultaneously.

Smart also offered free calls to affected subscribers.[35]

An estimated 3,900 people connected to the free Wi-Fi, while subscribers used around 100,000 free minutes on WhatsApp in the 10 days following the disaster. This enabled individuals to communicate, accelerated relief efforts, and restored access to systems for vital services, such as healthcare and banking.[36]

**Free internet access for 1,500 users**

**Across an area of 10,000 square metres**

**Charging up to 66 phones simultaneously**

**Subscribers used 100,000 free minutes on WhatsApp**

**CONTRIBUTES TOWARDS SDGS:**   9 INDUSTRY INNOVATION AND INFRASTRUCTURE   11 SUSTAINABLE CITIES AND COMMUNITIES   13 CLIMATE ACTION   17 PARTNERSHIPS FOR THE GOALS

35.   https://www.vodafone.com/content/foundation/mangkhut-hit-communities.html
36.   Mobile for Humanitarian Innovation Annual Report, GSMA, 2019

2019 Mobile Industry Impact Report: Sustainable Development Goals

## 2.3
# Mobile-enabled services transform lives

Consumers are doing more with their mobile phones. While voice, SMS and basic internet browsing can drive a significant impact on the SDGs, mobile technology also enables users to access a wide range of services and information including health, financial services and job search.

The proportion of mobile subscribers that engaged in activities on their phones relevant to the SDGs increased in 2018. This is another key driver of the industry's increased impact across all the SDGs.

**Figure 9**                                                                 Source: GSMA Intelligence

### Mobile usage by activity
Activity, % of respondents



| Activity | 2017 | 2018 improvement | Users |
|---|---|---|---|
| Visit social networking websites | 56% | 3% | 2.9bn users ↑ 170m |
| Read news | 52% | 4% | 2.7bn users ↑ 210m |
| Obtain info about products & services | 45% | 3% | 2.3bn users ↑ 130m |
| Purchase goods | 36% | 3% | 1.9bn users ↑ 160m |
| Use of mobile financial services | 30% | 2% | 1.6bn users ↑ 130m |
| Improve education | 25% | 3% | 1.4bn users ↑ 140m |
| Pay utility bills | 21% | 5% | 1.3bn users ↑ 260m |
| Improve/ monitor health | 21% | 5% | 1.3bn users ↑ 230m |
| Look/ apply for a job | 21% | 2% | 1.1bn users ↑ 80m |
| Access govt services | 19% | 4% | 1.1bn users ↑ 180m |

**2017**          **2018 improvement**

Data is sourced from the GSMA Intelligence Consumer Survey, which has more than 30,000 respondents covering 34 countries.

The number of users is calculated by multiplying unique mobile subscribers by the percentage of survey respondents that answered yes to performing a particular activity (e.g. reading the news) on a mobile phone.

Unique subscriber data is sourced from GSMA Intelligence, combining data reported by mobile operators with the annual GSMA Intelligence Consumer Survey.

# Mobile users are more likely to engage in activities that enhance education

**SDG 4:** Quality Education is the second most impacted SDG, driven by subscribers using their mobile phones for activities that can contribute to improving education, such as social networking and reading the news. Indeed, when there are several mobile-enabled activities that contribute to achieving a particular SDG – such as education – the industry has a greater impact.[37] By contrast, mobile has achieved less of an impact on SDGs such as 6: Clean Water and Sanitation and 7: Affordable and Clean Energy, which relate to fewer mobile use cases (such as paying or managing utility bills).

## SPOTLIGHT

### Mobile operators launch educational initiatives across the world

The most improved impact score since 2017 is for SDG 4: Quality Education, with mobile subscribers increasingly using their phones to access educational information. Supporting this growth, mobile operators have partnered with peers, NGOs and the public sector to provide educational resources through mobile to children across the world, from remote villages in developing countries to cities in advanced economies.

- China Unicom successfully installed 20 kilometres of optical cable and constructed multiple base stations in Duogai, a remote village in Chinese province Qinghai, with 400,000 inhabitants spread across an area covering 270 square kilometres. Having connected Duogai, China Unicom introduced a digital classroom service to the village school with modern facilities, including a digital whiteboard, audio-video control panel and projector.[38]

- In the US, Sprint set up the 1Million Project to provide connectivity to low-income families with young children. The initiative aims to provide connected devices to 1 million students, helping children without home internet access to use online resources without having to rely on the school library computers for revision and homework submission.[39]

- Mobile World Capital, with the support of mobile operators Orange, Telefónica and Vodafone, as well as partners Generalitat of Catalonia and Barcelona City Hall, have established the mSchools initiative in Barcelona. With the support of teachers, this approach encourages children to develop apps, mobile projects and core business skills in a safe environment.[40]

**CONTRIBUTES TOWARDS SDGS:**

---

37. This is consistent with recent evidence showing that enhancing education has been one of the main perceived benefits of mobile phone usage amongst users. See for example Mobile Connectivity in Emerging Economies, Pew Research Center, 2019.
38. For further information, see https://www.caseforchange.com/case-studies/education-reaches-new-heights-in-china
39. For further information, see https://www.caseforchange.com/case-studies/connectivity-close-homework-gap
40. For further information, see https://www.caseforchange.com/case-studies/empowering-the-next-generation-in-spain

**38**

**Introduction
and key findings**

**Industry Impact
on the SDGs**

**Mobile and
climate change**

**Accelerating
Impact**

2019 Mobile Industry Impact Report: Sustainable Development Goals

## Online news, e-commerce and digital finance also contribute to the SDGs

More than 50% of subscribers, equivalent to around 2.7 billion individuals, read the news on a mobile phone.[41] In addition to enhancing education, this supports free expression and access to information, contributing to SDG 10: Reduced Inequalities and SDG 16: Peace, Justice and Strong Institutions, which are both in the top half of SDGs impacted by mobile.

The popularity of purchasing goods and obtaining information on products and services via mobile phones also helps drive the industry's impact on the SDGs, particularly SDG 1: No Poverty and SDG 8: Decent Work and Economic Growth.

In 2018, 32% of mobile subscribers, equivalent to 1.6 billion people, used mobile financial services (mobile banking and/or mobile money). For individuals that would otherwise be excluded from financial services, this allows them to better manage their cash-flows, manage risk and build working capital. This contributes to several SDGs, including 1: No Poverty, 2: Zero Hunger, 3: Good Health and Well-being and 10: Reduced Inequalities. For those that already have access to financial services, the use of mobile also enables them to better manage their finances (for example, by giving them constant access to their account) and facilitates faster and more efficient transactions. Mobile finance also fosters the creation and expansion of businesses by helping them to invest and build capital over time, again contributing particularly to SDGs 1: No Poverty, SDG 8: Decent Work and Economic Growth, and SDG 10: Reduced Inequalities.

41.    GSMA Intelligence

⊕ **CASE STUDY**

## P2G payments via mobile money impact multiple SDGs

Person-to-government (P2G) payments are the transfer of funds from an individual to a government agency to pay for a public good (e.g. school fees), settle an outstanding amount (e.g. a traffic fine), or file tax returns. P2G payments via mobile money can have tremendous economic and social impact, contributing to multiple SDGs. This includes target 17.1, which aims to improve domestic capacity for government revenue collection as part of SDG 17: Partnerships for the Goals.

A report published by the GSMA[42] shows the benefits of Orange's digitisation of P2G payments in five countries in West and Central Africa. For example, digitising school fees increased convenience for users and savings for governments. In Senegal, the Customs School noted a 50% increase in registrations after digitising payments for its entrance exam registration. This was likely due to new candidates from non-urban areas who were able to avoid transportation costs by using a digital platform.

Furthermore, the digitisation of exam entry fees in Côte d'Ivoire created cost savings for the Ministry of Public Works, which enabled it to reduce the civil service exam entry fees by more than half.

Digitising public revenue collection can also increase resources for governments. Following the migration of their services to Kenya's e-Government platform, eCitizen, the Kenyan National Transportation Safety Authority (NTSA) doubled its revenue collection between July 2015 and October 2016, from an average of $1.1 million to $2 million per month. The Nairobi City County reported a 30% revenue increase between 2014 and 2016, attributed to fund collection using digital means, the majority of which was through mobile money.

The multiple P2G services launched by Orange demonstrate the significant potential of these services to contribute to achieving the SDGs. Despite the significant benefits of digitising P2G payments, this potential is still far from being fully realised. As of 2016, only $375 million (0.005%) of the estimated $8 trillion in global P2G payments were made in low- and middle-income countries.[43] Expanding P2G payments requires coordinated efforts from multiple partners to enable and encourage individuals and small businesses to pay for a wider range of government services digitally using mobile money.

**CONTRIBUTES TOWARDS SDGs:** [1 NO POVERTY] [2 ZERO HUNGER] [4 QUALITY EDUCATION] [8 DECENT WORK AND ECONOMIC GROWTH] [10 REDUCED INEQUALITIES] [16 PEACE, JUSTICE AND STRONG INSTITUTIONS] [17 PARTNERSHIPS FOR THE GOALS]

## Stimulating use of mobile-enabled services will be critical to enhance the impact of the mobile industry

While more than half of mobile subscribers are engaged in certain activities such as social networking and reading news, several other activities lack the same scale to drive the industry's SDG contribution as much as it could. For instance, around a quarter of subscribers (1.3 billion people) currently use mobile to improve or monitor their health.[44] The relatively lower take-up of health applications compared to other services is one of the reasons why SDG 2: Zero Hunger and SDG 3: Good Health and Well-being are in the bottom half of Goals impacted by the mobile industry.

42.  Person-to-Government (P2G) payments strategy: Lessons from Orange P2G payments in Africa, GSMA, 2019
43.  Global Landscape Study on Digitising P2G Payments, Dalberg Global Development Advisors, 2016
44.  GSMA Intelligence

2019 Mobile Industry Impact Report: Sustainable Development Goals

🔍 **SPOTLIGHT**

**2 ZERO HUNGER**

# SDG 2 and mobile usage in rural areas



## 140m

**140 million** people in rural areas were connected to the mobile internet for the first time in 2018

**40%**

**Over 40%** of the world's rural population do not subscribe to mobile and **two-thirds** are not connected to the mobile internet

Use of mobile-enabled services is also **lower** among rural subscribers compared to subscribers more generally

### Mobile use by all subscribers and rural subscribers (2018)

| Activity | All subscribers | Rural subscribers (developing countries) |
|---|---|---|
| **Improving or monitoring health** | 26% | 16% |
| **Transferring money** | 32% | 22% |
| **Purchasing goods** | 39% | 25% |
| **Accessing agricultural information service** | - | 7% |

Source: GSMA Intelligence

Data is sourced from the GSMA Intelligence Consumer Survey, which has over 30,000 respondents covering 34 countries.

The number of users is calculated by multiplying unique mobile subscribers by the percentage of survey respondents that answered yes to performing a particular activity (e.g. reading the news) on a mobile phone. Unique subscriber data is sourced from GSMA Intelligence, combining data reported by mobile operators with the annual GSMA Intelligence Consumer Survey.

2019 Mobile Industry Impact Report: Sustainable Development Goals

🔍 **SPOTLIGHT**



The rural-urban connectivity gap and the lower use of SDG-enabling services in rural areas explains why SDG 2: Zero Hunger and SDG 14: Life below Water have the lowest mobile industry impact scores. These SDGs have a particular focus on activities that mostly impact rural populations – for instance, increasing the agricultural productivity and incomes of small-scale food producers (SDG 2) and providing access for small-scale artisanal fishers to marine resources and markets (SDG 14).[45]

Given the importance of agriculture to many economies, one area where there is significant potential to increase rural usage is mobile agricultural information services. While there are a number of examples of such services, the majority have not yet reached the scale needed to drive the impact on SDG 2 that they could potentially achieve. However, those that have scaled can offer important lessons to operators, governments and other relevant stakeholders.

One example is Telenor Pakistan's agricultural value added service Khushaal Zamindar (Prosperous Farmer). This service aims to improve yields and save farmers from disaster. It had reached 8.6 million users at the end of March 2019.[46] Launched in December 2015, Telenor Pakistan has been able to drive adoption and use of the service by implementing a user-centric design approach that focusses on delivering relevant, localised

agricultural and weather information to farmers through delivery channels that suit the target segment, such as interactive voice response (IVR) and outbound dialling (OBD) push messages.[47]

Alongside information services, the mobile industry can enable other agricultural products and services by leveraging mobile money as a core asset. Examples include services that digitise agricultural payments to farmers, such as business-to-farmer payments for the sale of crops and government-to-farmer payments for agricultural subsidies, or e-commerce solutions enabling farmers to sell produce online.[48] To scale use of these services, mobile operators need to work closely with relevant partners, including agribusinesses and governments.

Importantly, these applications can drive adoption of mobile financial services among mobile subscribers in rural areas – in 2018, 22% of rural mobile subscribers in developing countries used such services. This brings smallholder farmers into the formal economy and provides them with the opportunity to earn higher incomes, supporting the industry's contribution not just to SDG 2: Zero Hunger; and 14: Life Below Water but also SDG 1: No Poverty, 8: Decent Work and Economic Growth and 10: Reduced Inequalities.

**CONTRIBUTES TOWARDS SDGS:**   1 NO POVERTY   2 ZERO HUNGER   8 DECENT WORK AND ECONOMIC GROWTH   10 REDUCED INEQUALITIES   14 LIFE BELOW WATER

45.   See UN SDGs
46.   For further information, see Khushaal Zamindar A mobile agriculture service by Telenor Pakistan, GSMA, 2017
47.   Creating scalable, engaging mobile solutions for agriculture, GSMA, 2017
48.   E-commerce in agriculture, GSMA Intelligence, 2019

**42**

**Introduction
and key findings**

**Industry Impact
on the SDGs**

**Mobile and
climate change**

**Accelerating
Impact**

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Call to action to drive use of mobile-enabled services

Despite its achievements thus far, the mobile industry can drive a much larger impact on the SDGs by providing consumers and businesses with a platform to access a range of services and information. This applies to both current services and those that will inevitably arise over the next ten years.

While tailored actions will be required for industry, governments and other stakeholders to accelerate adoption of mobile-enabled services (e.g. certain actions will be required to drive use of mobile agricultural services and others for mobile health), there are cross-cutting enablers that apply to all of them. These include the following:

- collaboration and partnerships between mobile operators, governments, international organisations, internet companies and other industries in order to **share data, expertise and best practice and to make products and services accessible to everyone**

- **enhancing the provision of public services online** such as e-government and digital identity, including to people with lower levels of literacy and digital skills

- **ensuring the safety and security of users**, including addressing harassment, fraud and data protection

- enabling policy and regulatory frameworks that **support investment and innovation in new products and services.**

## Accelerating IoT is critical for the industry to maximise its impact on the SDGs

IoT connections increased by 1.5 billion in 2018, reaching 9.1 billion connections worldwide.[49] This drives a significant impact on several SDGs – for example, providing innovative solutions to agricultural, industrial and manufacturing processes, in support of SDG 2: Zero Hunger, SDG 8: Decent Work and Economic Growth, and SDG 9: Industry, Innovation and Infrastructure. Nevertheless, the majority of IoT deployments remain of small or medium scale[50] as the market remains in its early stages. If the mobile industry is to achieve its maximum impact by 2030, scaling relevant IoT solutions will be essential. This will be underpinned by the deployment of 5G networks, which will connect billions of intelligent IoT connections and enable ultra-

reliable low-latency communications (see 'Spotlight: 5G and IoT').

Smart building and smart home verticals will drive IoT growth between 2018 and 2025, representing more than half of new IoT connections (see Figure 10). This has the potential to significantly increase the industry's impact on a number of SDGs, including 3: Good Health and Well-being, 11: Sustainable Cities and Communities, 12: Responsible Consumption and Production and 13: Climate Action. For example, IoT technologies can increase the energy efficiency of homes and business premises through smart meters.
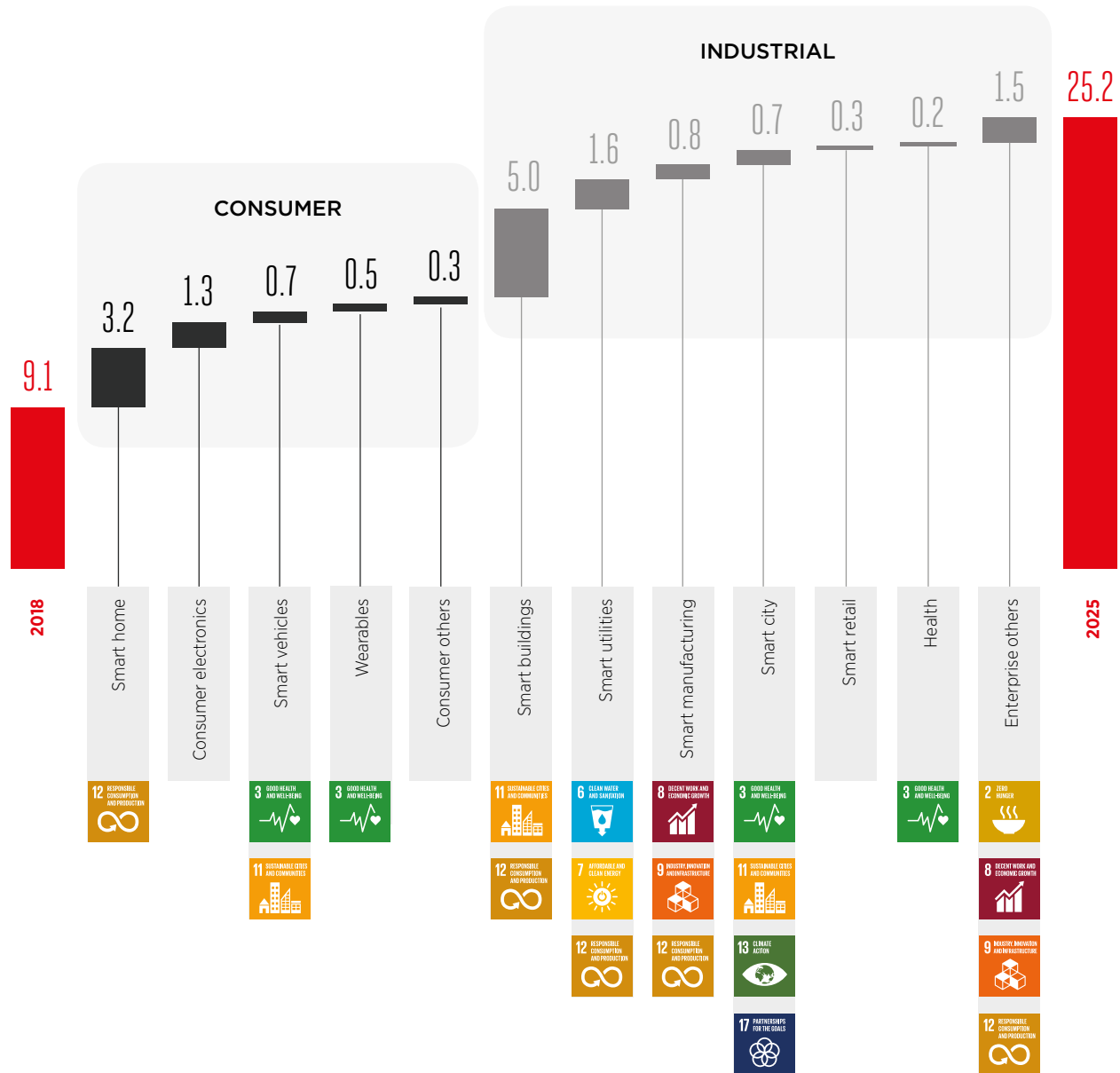
49.    GSMA Intelligence
50.    See for example https://www.weforum.org/agenda/2018/01/effect-technology-sustainability-sdgs-internet-things-iot/

2019 Mobile Industry Impact Report: Sustainable Development Goals

**Figure 10**

Source: GSMA Intelligence

## IoT connections by vertical, 2018-2025
Billions



The GSMA Intelligence IoT connections dataset is based on a proprietary forecasting methodology that combines multiple approaches to market sizing. Enterprise others includes agriculture, oil & gas and other verticals

2019 Mobile Industry Impact Report: Sustainable Development Goals



Several enablers must come together to create an effective environment for IoT adoption. This includes enablers that drive mobile adoption (e.g. access to mobile infrastructure) and specific IoT enablers, including the following:

**Affordability:** reducing the cost of implementing IoT solutions drives adoption. New standards-based Mobile IoT technologies, NB-IoT and LTE-M, were developed to lower the cost of cellular IoT solutions. As IoT deployments reach greater scale, the total cost of cellular IoT deployments will reduce as initial investment in new technologies is amortised. The cost of data storage is also declining, allowing more data from IoT devices to be stored in the cloud.

**Collaboration:** partnerships are crucial to spur interoperability (SDG 17: Partnership for the Goals) and to enable end-to-end IoT solutions for a diverse group of customers. No single company can address the needs of an entire IoT ecosystem, and fragmentation has been a major issue in scaling adoption of connected devices.

**Policy:** establishing enabling regulation can boost IoT connections. For instance, government regulation aimed at reducing waste and environmental impact drives adoption of smart meters and smart grids. Governments should also avoid higher taxes (especially those that are sector-specific) on low-cost IoT networks, components and devices.

**Security:** the growth of connected devices increases the number of vulnerabilities and points of entry for cyber-attacks, so securing IoT is a key enabler of sector growth.

**AI:** advances in AI will touch on multiple aspects within IoT and wider society, providing an enabling layer for applications and new business models.

The mobile industry has an important role in many of these areas. For instance, operators are well placed to drive developments in IoT security because they have a direct billing relationship with customers and are able to analyse network, device and application traffic to create security insights for customers. Operators have also demonstrated their willingness to collaborate with third parties, such as MTN's partnership with local utility firms in Ghana to trial mobile money services and M2M connectivity for water ATMs and prepaid household meters.[51]

---

51.    Mobile for Development Utilities Annual Report, GSMA, 2019

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

45

2019 Mobile Industry Impact Report: Sustainable Development Goals

🔍 **SPOTLIGHT**

## 5G and IoT

5G commercial launches began in 2019, led by Verizon in the US and SKT, KT and LG U+ in South Korea. Early launches can also be expected in other advanced markets across Asia Pacific, Europe, MENA and North America, before 5G is more widely deployed in the post-2020 period.



Although IoT applications are well supported on existing 4G networks, some can benefit from enhanced 5G capabilities. For instance, 5G networks can provide additional capacity, which will be vital for IoT applications involving large-scale deployments and use of real-time analytics and AI. This is key for the smart city and smart vehicle verticals, with 5G driving the deployment of solutions to monitor and manage traffic and pollution (impacting SDG 11: Smart Cities and Communities and SDG 13: Climate Action), as well as improving vehicle safety (SDG 3: Good Health and Well-being).

5G also supports enhanced quality of service and lower latency, enabling applications that require ultra-reliable low latency communication and time-sensitive networking. These capabilities are expected post-2021 and will be required for time-critical industrial IoT manufacturing processes including closed-loop robotic control, machine-human interactions, automated guided vehicles, and AR/VR. Importantly, existing Mobile IoT Technologies NB-IoT and LTE-M are already part of the 5G roadmap for Massive IoT, and investment in these technologies is already part of the early 5G innovation in the industry. This is crucial to driving the sustainability of manufacturing and industrial processes, increasing the industry's contribution to SDG 9: Innovation, Industry and Infrastructure and SDG 8: Decent Work and Economic Growth.

**CONTRIBUTES TOWARDS SDGS:** 3 GOOD HEALTH AND WELL-BEING | 8 DECENT WORK AND ECONOMIC GROWTH | 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 11 SUSTAINABLE CITIES AND COMMUNITIES | 13 CLIMATE ACTION

# Partner to build trust and transparency in the 5G world

Deploying 5G is a further opportunity for operators to move beyond connectivity and collaborate across sectors such as finance, transport and health to deliver new, rich services to consumers and businesses. It is an opportunity for industry, society and individuals to advance their digital ambitions, with 5G a catalyst for innovation.

To achieve these ambitions, the mobile industry can play a leading role in establishing multi-stakeholder partnerships, driving coordination of the sustainable development agenda, as well as continuing to develop and implement open platforms that enable innovation.

The Digital Declaration launched in Davos in 2019, is an example of collaboration across the private sector to align behind a set of guiding principles for responsible business in the digital age. To date, it is supported by more than 55 CEOs across the world.

## SPOTLIGHT

## AI and aging populations

South Korea is facing an aging population, with an increasing number of senior citizens living alone. The cost of social care and the alienation from society felt by elderly citizens have become major social issues in the country.

In 2018, the Council for the local government and mobile operator SK Telecom signed an MOU to leverage artificial intelligence to tackle these social issues. The initiative, known as 'The Happy Community', gives an SK Telecom AI speaker to senior citizens living alone. This can be used to access a range of services, such as emotional talk, emergency SOS calls, customised care services and psychological counselling.[52]

By April 2019, 2,100 households in eight local government regions had participated in The Happy Community project, with this extended to a further two local governments in July 2019.[53] These activities have the potential to enhance the government's welfare policies, improving the care given to elderly citizens, which contributes to achieving SDG 3: Good Health & Well-being. It also impacts SDG 17: Partnerships for the Goals through the improved cost efficiency of ICT-based care services providing a boost to government finances. This enables more efficient government spending on activities that contribute to the SDGs.

CONTRIBUTES TOWARDS SDGS: 3 GOOD HEALTH AND WELL-BEING | 17 PARTNERSHIPS FOR THE GOALS

52. http://news1.kr/articles/?3647820
53. https://www.sktinsight.com/115934

## 2.4
# Incorporating SDGs into core business

While responsible and sustainable business strategies are already well established in the mobile industry, achieving the SDGs goes beyond business as usual.

The industry's impact on the SDGs is principally driven by the provision of mobile connectivity and services, but operators also make a significant contribution to sustainable development through their business and operational activities.

Several operators have mapped the SDGs against their strategies to identify the goals relevant to their activities and where their networks, products and services can have the greatest impact. While the mobile industry has huge potential to positively contribute to the SDGs, operators also need to manage the impact of their own operations on the SDGs and respond to social, environmental and ethical issues. Ultimately, it is about finding ways to integrate the pressing needs of the planet and to advance equality into the way operators do business every day.

# The GSMA Sustainability Assessment Framework

The Framework was developed to better understand operator efforts in social and environmental sustainability. Through the framework, the GSMA assesses operator corporate responsibility and sustainable development activities. In 2018, the GSMA assessed 25 mobile operators represented on its Board at that time.[54]

The overall SDG impact scores for this report were informed by the operator scores against the Framework's Operating Responsibly pillar.[55] This focuses on an operator's management systems to improve performance on sustainability issues within its own operations and value chain. For the material issues for the mobile sector, the GSMA assessed mobile operators based on the presence of policies, management systems, accountability and governance, performance trend and targets. Figure 11 presents a summary of the average scores for each issue based on the 25 operators assessed.

**Figure 11**

## Operating responsibly – key issues

Representation of average scores
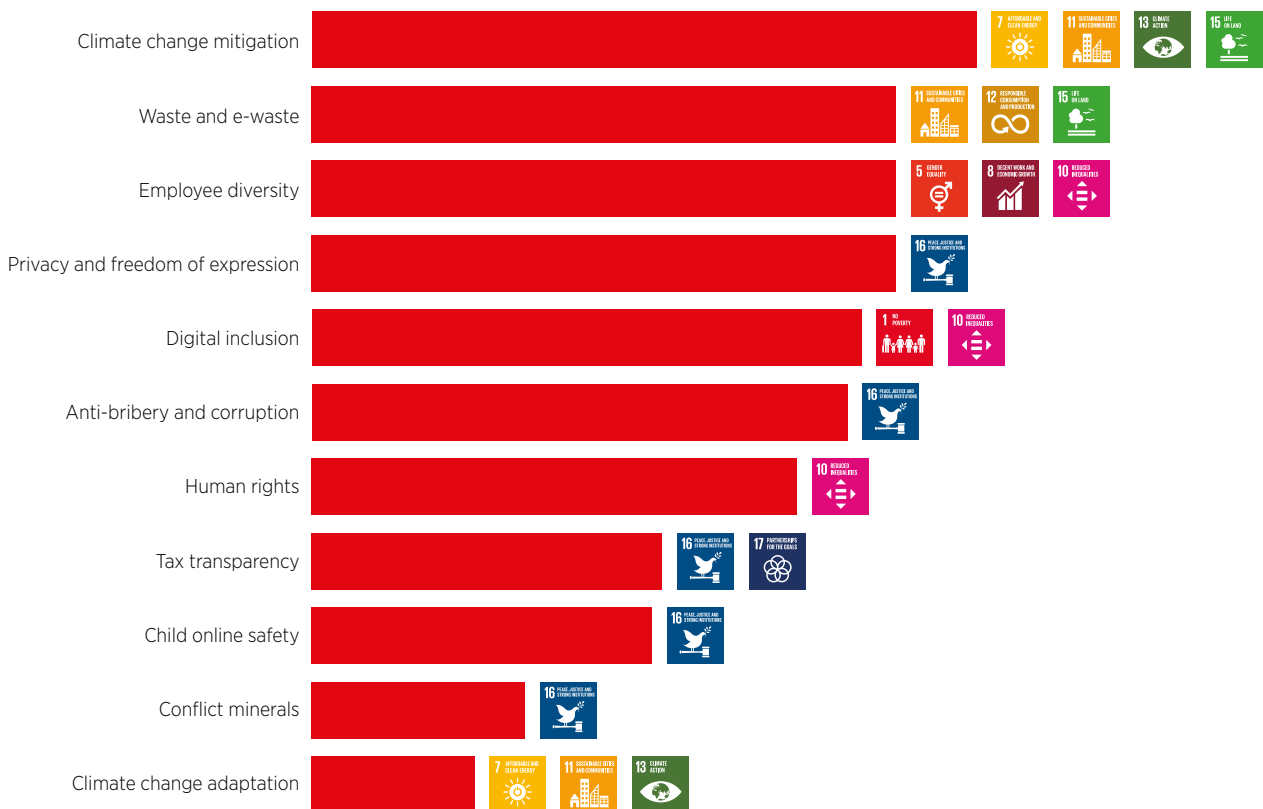
# Call to action to improve sustainability measurement and reporting

Being responsible and accountable for environmental and social performance makes business sense in today's commercial environment. Understanding and responding to global trends and working to meet the expectations of consumers, policymakers and investors can help manage risks and create opportunities for business.

## GSMA suggests five essential building blocks to operating responsibly:



Reporting

Strategy

Performance management

Stakeholder engagement

Governance

Read more in the Guide to Operating Responsibly

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Accelerating connectivity and sustainability must go hand-in-hand

Achieving a significant SDG impact through providing connectivity to individuals and businesses but not operating responsibly with respect to social, environmental and ethical issues is unlikely to be sustainable. Similarly, implementing responsible management systems while not maximising the connectivity opportunity would be self-defeating. Consequently, mobile operators must focus on the connectivity and sustainability layers in parallel, or risk weakening the industry's contribution to the SDGs. Indeed, the two enablers are mutually reinforcing as operators that have the right policies and structure in place are more likely to drive higher impacts on the SDGs in terms of connectivity. Furthermore, collaboration and partnerships with governments, international organisations and other sectors – as well as between operators – will only enhance the industry's impact.

Operator efforts to tackle climate change exemplify this approach. SDG 11: Sustainable Cities and Communities and 13: Climate Action, which both have a strong climate focus, are respectively the third and fourth most impacted SDGs by the mobile industry. Operators are adopting new systems and targets to reduce their greenhouse gas (GHG) emissions, supported through increasing engagement with international initiatives such as CDP and SBTI. At the same time, improvements to mobile connectivity and IoT deliver numerous benefits such as reductions in travel, lower pollution and more efficient use of energy (for example, IoT solutions for smart cities and smart grids). We discuss the industry's impact on climate change in more detail in the next section.

2019 Mobile Industry Impact Report: Sustainable Development Goals

52

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

# 03
# Mobile technology and climate change

**13 CLIMATE ACTION**

Climate change threatens sustainable development everywhere. Collaboration, on a global scale, is key to mitigating the catastrophic impacts of the world's rising temperatures.

The SDGs and the Paris Agreement on Climate Change[56] signal a global effort to transition to a sustainable, low-carbon future. The Paris Agreement commits governments to act to keep global temperature rise to well below 2°C above pre-industrial levels, and to pursue efforts to limit temperature rise even further to 1.5°C.

Since Paris, the Intergovernmental Panel on Climate Change has issued its starkest warning yet on the consequences of climate inaction and the importance of limiting global heating to 1.5°C. It recommends that countries reduce carbon emissions by 45% by 2030 and to net zero by 2050.[57]

Encouragingly, recent analysis launched at the 2018 UN climate meeting outlined that 16% of global GDP was now covered by a net zero target.[58] Yet the level of urgency and action needed to meet these targets is lagging behind the harsh reality of what climate science is telling us. There is an increasingly powerful voice from civil society calling for bolder, faster action.[59]

Compared to many other sectors, the mobile industry is not the largest contributor of carbon emissions, but as we increasingly enter a digitised world, it can be part of the solution. Collaboration is needed to limit the industry's own emissions and maximise its potential to help other sectors reduce their impact. In support of this, the GSMA has announced an industry-wide plan for disclosure and emissions target setting and along with many of its members, has committed itself to be net zero by 2050.

## 3.1
# Enabling the transition towards a zero carbon economy

Mobile technology's biggest impact on climate change is from its ability to enable other sectors of the economy to reduce their greenhouse gas (GHG) emissions.

This is through providing the connectivity for digital solutions that reduce energy use, reduce travel and transport, or otherwise reduce GHG emissions. Examples include connectivity for buildings to support energy management and for vehicle telematics (reducing fuel consumption and optimising routing). This is in addition to more traditional areas of remote and mobile working, reducing emissions from travel and commuting. Emerging areas with significant

potential for future emissions reductions include agriculture, health, the sharing economy and smart cities.

With the impact of mobile-based solutions closely linked to improvements in connectivity, operators' networks offer a scalable, secure and standardised way to connect assets across a variety of services in an economically sustainable manner.
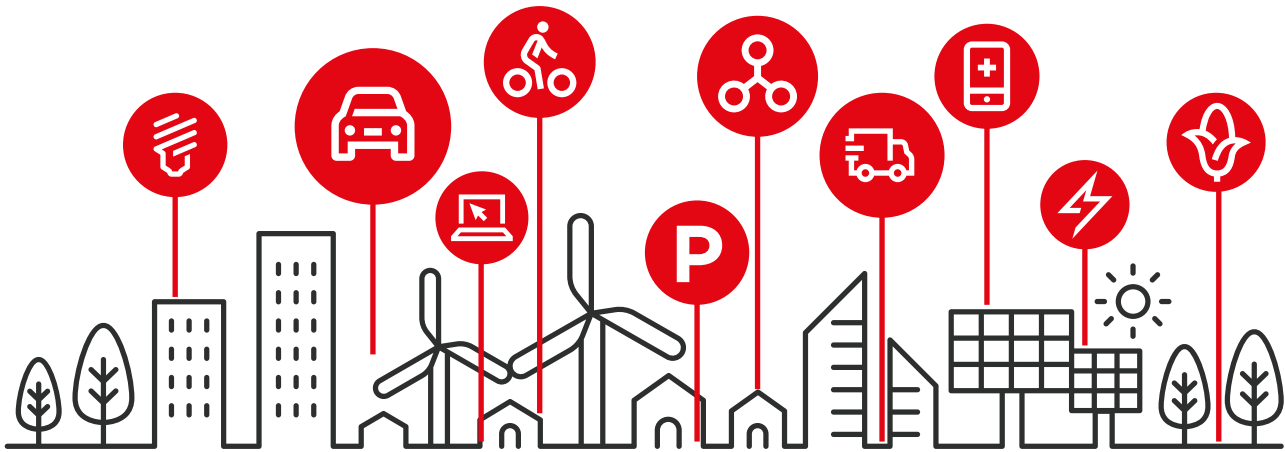
56.     https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement
57.     Global Warming of 1.5 ºC, IPCC, 2018
58.     "One-sixth of global economy under net zero targets", Energy & Climate Intelligence Unit, June 2019
59.     See for example: https://rebellion.earth and https://www.schoolstrike4climate.com

2019 Mobile Industry Impact Report: Sustainable Development Goals

---

**Figure 12**

**How mobile is enabling a low-carbon future**



**Smart traffic management:** This enables more efficient traffic flows, thereby easing congestion and lowering vehicle pollution. Verizon is using intelligent asphalt, with embedded sensors that monitor traffic flow, permitting cities to adjust traffic signals to reduce commuting times and carbon emissions.[60]

**Smart urban lighting:** Intelligent street lighting can lower electricity demand by switching off when not required. Using IoT technology, in the city of Guadalajara, Spain, Vodafone connected 13,500 LED lights to a central management system, reducing street lighting energy consumption by 68%.[61]

**Smart parking:** Mobile apps help drivers find available parking spaces, reducing congestion and GHG emissions. Deutsche Telekom's Park and Joy app shortens the time spent looking for a parking spot. In 2018, users could search around 30,000 parking spots in 45 cities with the app.[62]

**Smart logistics:** Mobile connectivity allows the collection of vehicle data. This can then be used for optimisation of route planning, load optimisation, and improvement of driver behaviour. Smart vehicle or fleet management solutions reduce fuel consumption and associated GHG emissions. AT&T-enabled wireless fleet management technology allows fleet managers to use data to more efficiently deploy and route vehicles to help reduce delivery and idle time, improve mileage and reduce fuel costs.[63]

**Building energy management systems:** Machine-to-machine (M2M) connectivity allows for the automation and monitoring of building systems remotely – for example, allowing systems to be switched on and off depending on occupancy or temperature. It can also apply analytical tools for predictive maintenance and more sophisticated building control policies, such as adjusting heating in line with the weather forecast and historical data. For example, Telefónica's Big Data Service LUCA Energy optimises energy consumption and forecasts future energy consumption costs.[64]

60. https://www.verizon.com/about/sites/default/files/corporate-responsibility-report/2018/environment/efficiency.html
61. Sustainable Business Report 2019, Vodafone Group, 2019
62. https://www.cr-report.telekom.com/site19/customers-products/sustainable-products-and-services#atn-15804-15812
63. Progress to 2025 — 10x Goal Update, AT&T, 2019
64. https://luca-d3.com/energy-cost-savings/index.html

**Remote working:** Smartphones and mobile connectivity enable remote working and collaboration, reducing the need for travel and therefore reducing GHG emissions. For AT&T, its mobile work tools and virtual collaboration technology represent its largest source of technology-enabled carbon reduction in 2018. Desk-based video conferencing using AT&T voice and data connectivity reduce the need for travel. [65]

**Sharing economy:** Ride-sharing, car-sharing, bike-sharing and other exchange activities such as finding new owners for unwanted goods or offering unused space for accommodation help to reduce travel emissions or emissions from manufacturing new goods. In addition, smartphones can provide remote access to personal services such as mobile banking and smart home control, reducing energy consumption.

**Smart grids:** M2M technology is important for the functioning of smart grids to actively manage and monitor the generation and distribution of electricity. This enables greater amounts of renewable energy generation to be connected to the grid, as the greater decentralisation and intermittence of renewables needs different and more distributed management systems. Vodafone is helping utilities deliver electricity sustainably and efficiently through remote data management and monitoring capabilities, automation and control.[66]

**Connected health:** Mobile solutions are expanding access to medical and health services. Using solutions such as remote patient monitoring, patients can reduce the number of trips to see a medical provider, saving time and reducing fuel usage and hospital emissions. In 2018, Verizon avoided 147,023 tonnes of $CO_2e$ through remote patient monitoring and reduced travel and days in hospital.[67]

**Precision agriculture:** This refers to the combination of monitoring crops with satellites, thermal imaging and sensors. Data collected can help farmers precisely optimise yields and reduce fertiliser and pesticide use, as well as improving water efficiency in irrigation, saving GHG emissions. For example, Telefónica is using big data to support small and medium-sized cattle ranchers in Ecuador.

65. Progress to 2025 — 10x Goal Update, AT&T, 2019
66. https://www.vodafone.com/business/iot/end-to-end-solutions/smart-grid-and-metering
67. https://www.verizon.com/about/sites/default/files/corporate-responsibility-report/2018/environment/efficiency.html

**56**

**Introduction
and key findings**

**Industry Impact
on the SDGs**

**Mobile and
climate change**

**Accelerating
Impact**

2019 Mobile Industry Impact Report: Sustainable Development Goals

## SPOTLIGHT

# Emerging technology supporting climate action

Artificial intelligence (AI), the Internet of Things (IoT), big data analytics and other frontier technologies – underpinned by mobile connectivity – offer significant potential in engineering innovative climate solutions in the areas of adaptation, mitigation and finance.

Using AT&T IoT connectivity to collect temperature data, ndustrial.io combined temperature, energy and food information to enable Lineage Logistics to manage its cooling operations, reducing costs and GHG emissions. Based on data for three years, AT&T has calculated an average annual electricity cost reduction worth $4 million and an emissions avoidance equivalent to 2.4 million gallons of gasoline.[68]

Telefónica's Big Data for Social Good unit is geared towards using data to help the development of society, thereby contributing to the SDGs. The "Climate-Smart Agriculture" project in Ecuador is designed to provide information and training to small and medium-sized cattle ranchers in ways to improve the production of their cattle while minimising the impact of the GHG emissions of their holdings. For that purpose, advanced mathematical and analytical models are being used to generate relevant and industrialised information to each cattle ranch.[69]

Recent research by PwC[70] estimates that the application of AI could reduce worldwide GHG emissions by 4% by 2030. The enablement potential of these and similar solutions could be further enhanced by the increased bandwidth and reduced latency of 5G networks.

68.   AT&T 10x Case Study, AT&T, 2018
69.   Integrated Management Report 2018, Telefónica, 2019
70.   "Using AI to better manage the environment could reduce greenhouse gas emissions, boost global GDP by up to US $5 trillion and create up to 38m jobs by 2030", PWC, April 2019

2019 Mobile Industry Impact Report: Sustainable Development Goals

## Ambitious goals to enable emissions reductions

In recent years, an increasing number of mobile operators have been setting ambitious enablement impact goals (or avoided emissions impact). Mobile operators are already reporting good progress on enabling GHG emission reductions through their mobile products and services.

- AT&T has partnered on the Net Positive Project.[71] It is seeking to harness the power of mobile technology to enable GHG emissions reductions that are 10 times greater than its own by 2025. At the end of 2018. AT&T enabled GHG savings equivalent to approximately double the carbon footprint of its operations.[72]

- Similarly, by 2025, for each ton of CO2 emitted by Telefónica, it aims to avoid 10 tons of CO2 in the atmosphere through its services. In 2018, Telefónica calculated that the emissions that its customers avoided through "digitalisation" were 1.15 times the sum of its scope 1 and 2 emissions.[73]

- Deutsche Telekom calculated that the "positive CO2 effects" facilitated for its customers in Europe were 21% higher than its total emissions in 2018 (an enablement factor of 1.21).[74]

- For the 2018/19 financial year, BT stated that its "carbon-saving products and services" (including teleconferencing and cloud networking) helped customers save 11.7 MtCO2e: equivalent to 2.6 times its own end-to-end emissions.[75]

- In 2018, Verizon's solutions enabled the avoidance of 8.2 million metric tons of CO2e, equivalent to taking 1.6 million cars off the road. The emissions avoided represent approximately 1.68 times the emissions generated by Verizon's operations (scope 1 and 2).[76]

## 3.2
## Improving resilience to the effects of climate change

Climate change has made weather patterns harder to predict, and extreme events such as droughts and floods have become more frequent and severe, resulting in famine, hunger and displacement. Even with global efforts to reduce emissions, some climate change is inevitable. Action to adapt to its impacts is needed.

The Task Force on Climate-related Financial Disclosures[77] initiative urges companies to assess and disclose their financial exposure to climate risk. For the mobile sector, network infrastructure is exposed to climate risk from extreme weather events. For example, Hurricane Maria damaged 90% of Puerto Rico's telecoms infrastructure, costing an estimated $1.2 billion. Of the 1,600 cellular sites on the island, over 80% were knocked out of service.[78] The risk of future events can be mitigated – for example, through increasing the resilience of masts and switching sites.

The industry has an important role to play in adapting and responding to the effects of climate change. For example, mobile networks are facilitating access to information and coordinating assistance before, during and after climate-related emergencies. These efforts are often supported by operators' in-house disaster response teams,[79] while mobile technology has rapidly become an attractive delivery channel for many forms of aid.[80]

71. https://www.netpositiveproject.org/
72. Progress to 2025 – 10x Goal Update, AT&T, 2019
73. I.e. direct and indirect emissions. Further descriptions are provided in Section 3.3. Integrated Management Report, 2018, Telefónica, 2019
74. https://www.cr-report.telekom.com/site19/facts-figures/environmental-indicators/enablement-factor#
75. Digital impact and sustainability report 2018/19, BT Group, 2019
76. https://www.verizon.com/about/sites/default/files/corporate-responsibility-report/2018/environment/efficiency.html
77. For more detail, see: https://www.fsb-tcfd.org/
78. The 2017 Atlantic Hurricane Season: Mobile industry impact and response in the Caribbean, GSMA, 2018
79. For example, AT&T: https://www.greenbiz.com/article/att-dives-deep-climate-data
80. Partnership Guidelines: Building effective partnerships between MNOs and NGOs in complex environments and crises, GSMA, 2016

**Figure 13**

## Mobile's role predicting and protecting during climate-related disasters
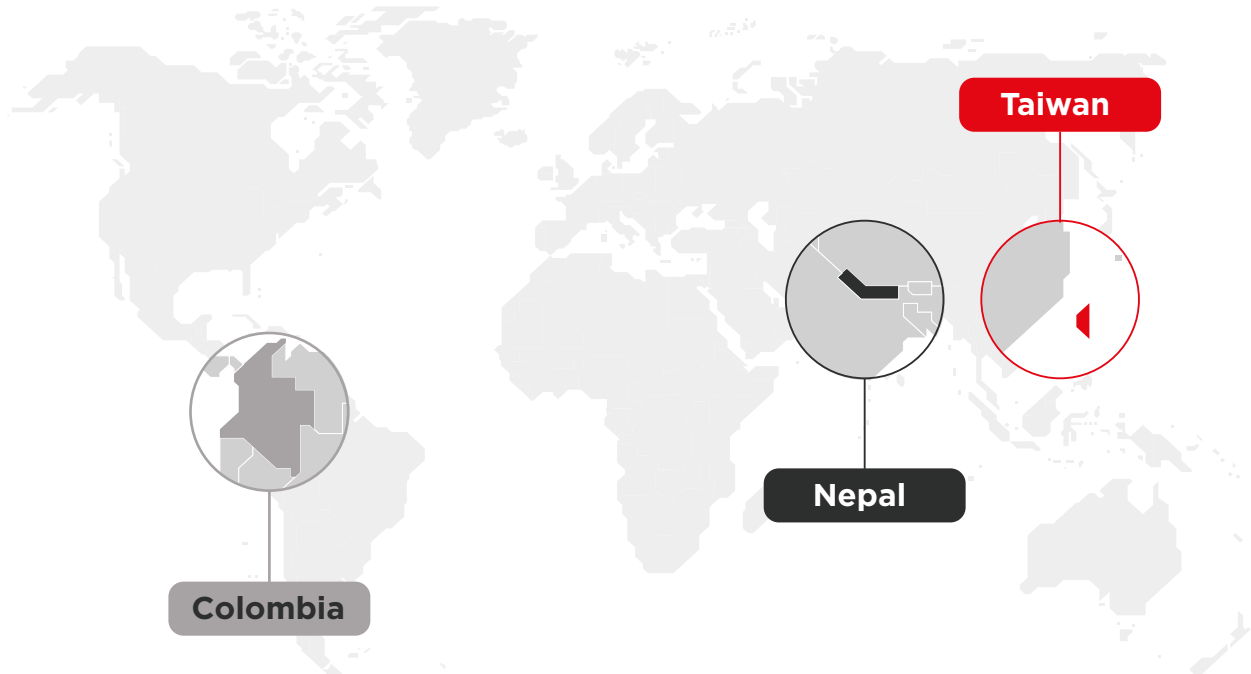


## Predicting climate disasters

As part of a 4G Smart City Project, telecoms company Far EasTone and the Tainan City Government (Taiwan) have implemented a smart water disaster management system, allowing authorities to successfully predict flooding and the potential for disasters.[81]

## Alerting high-risk citizens

Ncell has partnered with the Department of Hydrology and Meteorology (DHM) to send early-warning alerts to its customers living in high-risk areas of floods and landslides in Nepal, encouraging them to move to government-designated safe locations when water levels become too high.[82]

## Supporting vulnerable communities

The GSMA, Telefónica and the UN Food and Agriculture Organization (UN FAO) have leveraged mobile big data to measure how and to what extent climate change contributes to the internal displacement and movement of citizens in Colombia. Identifying and quantifying migration flows helps the government make more informed and targeted policy interventions, facilitating support for vulnerable communities.[83]

81.   Maximising the smart cities opportunity: Recommendations for Asia-Pacific policymakers, GSMA, 2017
82.   2018 Mobile Industry Impact Report: Sustainable Development Goals, GSMA, 2018
83.   The Mobile Economy Latin America and the Caribbean 2018, GSMA Intelligence, 2018

Mobile is also supporting, and will drive further innovations in, climate adaptation across many markets. It plays a key role in disseminating valuable weather information, complementing broadcast media. In a changing climate, weather content is highly valued by smallholder farmers accessing mobile agriculture information services – for example, Ooredoo Myanmar's Site Pyo and Airtel's 321 service in Malawi.[84] Meanwhile, Orange Business Services and Dacom's smart agriculture service leverages big data analysis to allow farmers to better understand and adjust to climate change.[85]

The industry is also increasingly bridging the data gap in weather monitoring and forecasting. For example, low-cost connected weather stations are being deployed at base stations for access to power, while mobile networks' microwave links data is being utilised for accurate rainfall measurements. New mobile financial services, including digital weather index insurance,[86] are also emerging to strengthen the climate resilience of rural populations.

---

⊕ **CASE STUDY**

## Orange uses digital expertise to monitor climate change and promote alpine biodiversity



In the mountains, climate change is having a larger and faster impact. It is most visible in the melting of glaciers, but it is also having significant observable effects on flora and fauna.

In terms of biodiversity, Mont Blanc is a unique site of European and global importance. Over its 4,300 m of elevation, its animal and vegetable diversity equals that found over a 4,300 km stretch from Northern to Southern Europe, from Greenland to Barcelona.

Orange has partnered with CREA Mont-Blanc, the Research Center for Alpine Ecosystems, since 2014, to help make Mont Blanc a key site for monitoring the planet's climate. High altitude antennas, for example, measure data which is then shared by mountain range researchers throughout the world. Connected cameras monitor the behavioural and habitat changes of certain animal species.

---

84.  2018 Mobile Industry Impact Report: Sustainable Development Goals, GSMA, 2018
85.  "Smart Agriculture: fertile ground for digital technology", Orange, December 2016
86.  ACRE in Kenya by Syngenta Foundation in partnership with seed company Seedco and MNO Safaricom, and EcoFarmer in Zimbabwe, a partnership between Econet Wireless and Mercy Corps, are early examples of mobile weather index insurance products. See: mAgri: Weather forecasting and monitoring: Mobile solutions for climate resilience, GSMA, 2016

2019 Mobile Industry Impact Report: Sustainable Development Goals

## 3.3
# Reducing emissions and driving energy efficiency

The latest estimate of the energy footprint of mobile networks is about 130 TWh per year, with a GHG footprint of about 110 MtCO2e per year – this is equivalent to approximately 0.6% of global electricity consumption and 0.2% of global GHG emissions. This is for the network emissions only; including the emissions of mobile phones (including their manufacture and use) brings the total annual footprint to about 200 MtCO2e, or about 0.4% of global GHG emissions.[87] [88]

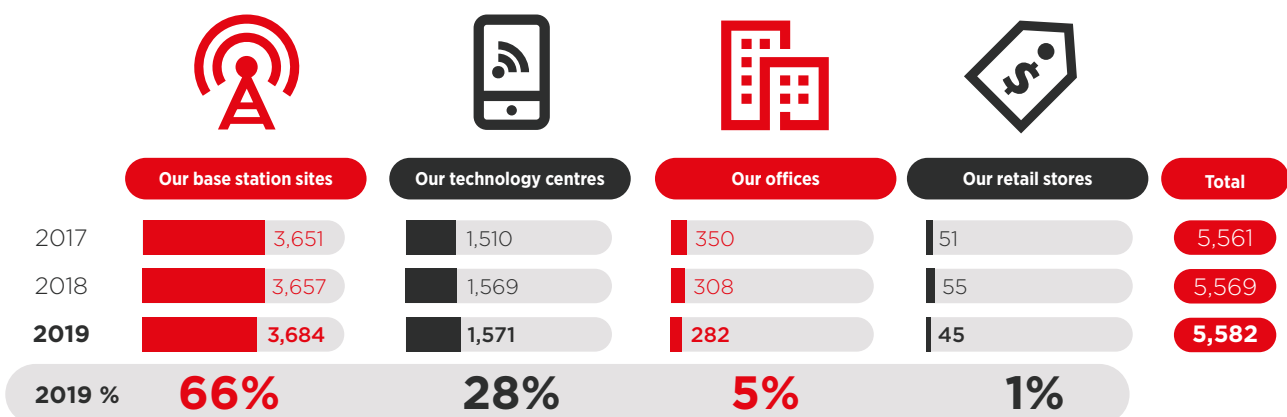At a company level, GHG emissions are classified under three categories, or 'scopes':

• **Scope 1:** All direct sources of emissions owned or controlled by the operator, predominantly arising from fuel consumption to power fleet, heat buildings and power back-up generators.

• **Scope 2:** Indirect emission sources, predominantly power consumption through electricity purchased to power networks and data centres.

• **Scope 3:** Emissions from corporate business travel; emissions from suppliers providing goods and services; and emissions associated with the use of products and services by customers.

For many mobile operators, the largest emissions within their own operations (scope 1 & 2) stem from the deployment and running of networks. This is where the bulk of the energy consumption and therefore GHG emissions lie. For many operators, this is approximately 90% of the energy consumption of their operations (e.g. 94% for Vodafone: base stations plus technology centres).

**Figure 14**

Source: Vodafone

**Energy use (GWh) by business area at Vodafone[89]**



| | Our base station sites | Our technology centres | Our offices | Our retail stores | Total |
|---|---|---|---|---|---|
| 2017 | 3,651 | 1,510 | 350 | 51 | 5,561 |
| 2018 | 3,657 | 1,569 | 308 | 55 | 5,569 |
| **2019** | **3,684** | **1,571** | **282** | **45** | **5,582** |
| **2019 %** | **66%** | **28%** | **5%** | **1%** | |

Mobile operators recognise the urgency of the climate crisis and are striving to minimise their own climate impact, embarking on an ambitious journey towards decarbonisation. Delivering a zero carbon future will necessitate timely and effective action in a number of areas, especially energy efficiency, sourcing renewable energy, and working with stakeholders to decrease value chain emissions.

---

87. These figures are based on research by Ericsson and Telia of the global ICT GHG footprint, published in 2018 using 2015 data: The Energy and Carbon Footprint of the Global ICT and E&M Sectors 2010–2015, Jens Malmodin and Dag Lundén, Sustainability 2018, 10(9), 3027; https://doi.org/10.3390/su10093027 - Global ICT footprint 730 MtCO2e; global ICT networks footprint 180 MtCO2e
88. That research itself was based on a more detailed analysis, by the same authors, of the carbon emissions of ICT networks, using primary data from telecoms operators in different countries: The electricity consumption and operational carbon emissions of ICT network operators 2010-2015, Jens Malmodin and Dag Lundén, KTH Centre for Sustainable Communications, 2018; http://www.diva-portal.org/smash/get/diva2:1177210/FULLTEXT01.pdf - approximate split in emissions for mobile/fixed networks is 60%/40%.
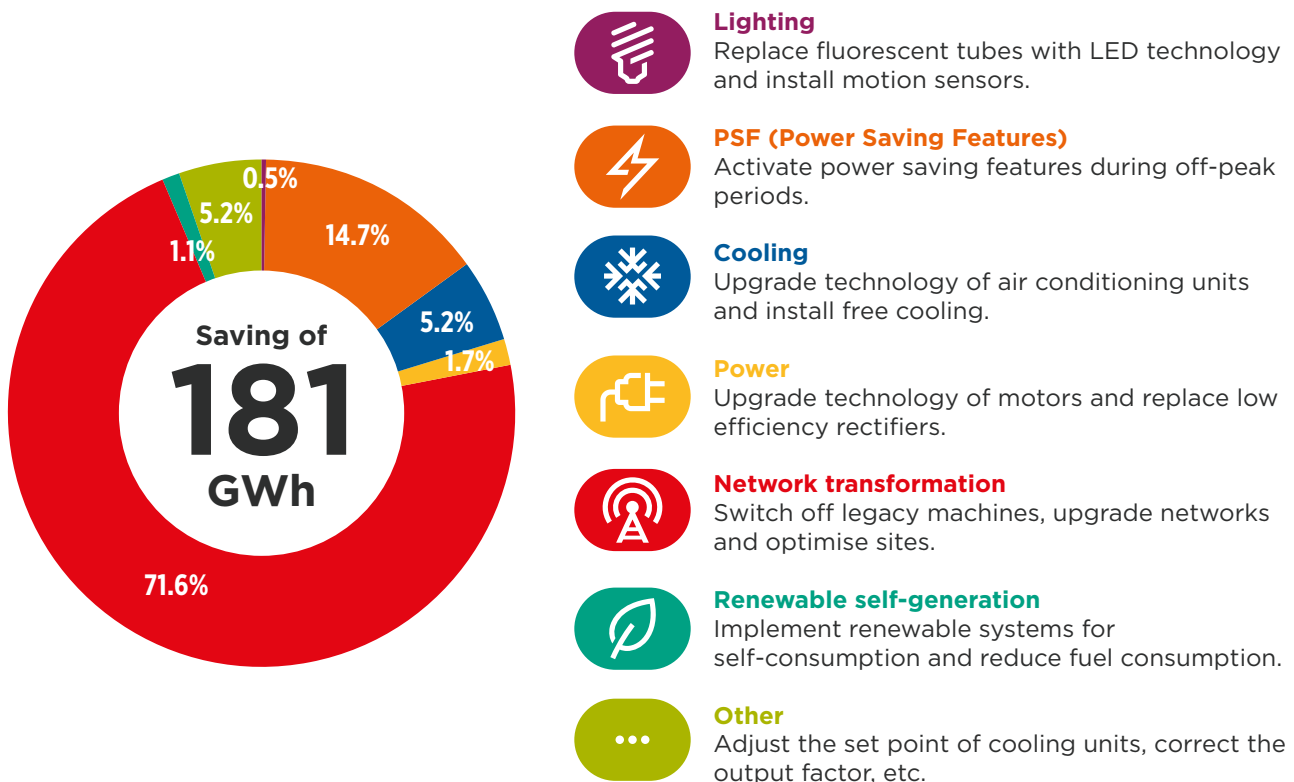89. Sustainable Business Report 2019, Vodafone, 2019

# Energy efficiency

Energy efficiency initiatives help operators decouple energy consumption from data traffic growth, stabilising the former in spite of huge increases in the latter. As mobile usage continues to grow at pace, so does the demand for energy, particularly from network infrastructure. With the risk of energy cost inflation in the future, mobile operators' targets for reducing energy use and GHG emissions are intrinsically linked to the implementation of energy efficiency practices.

For example, since the launch of Telefónica's energy efficiency plan in 2010, it has implemented 740 individual projects, saving more than 4,000 GWh and €553 million, and avoided close to 1.3 million tons of $CO_2e$ emissions. In 2020, efficiency measures are expected to deliver opex savings equivalent to €90 million. The energy efficiency plan has enabled Telefónica to reduce energy consumption and GHG emissions, despite experiencing data traffic growth of 176% over the 2015-2018 period.[90]

**Figure 15**

Source: Telefónica

**Telefónica's energy savings attribution in 2018**



**Lighting**
Replace fluorescent tubes with LED technology and install motion sensors.

**PSF (Power Saving Features)**
Activate power saving features during off-peak periods.

**Cooling**
Upgrade technology of air conditioning units and install free cooling.

**Power**
Upgrade technology of motors and replace low efficiency rectifiers.

**Network transformation**
Switch off legacy machines, upgrade networks and optimise sites.

**Renewable self-generation**
Implement renewable systems for self-consumption and reduce fuel consumption.

**Other**
Adjust the set point of cooling units, correct the output factor, etc.

---

90. Integrated Management Report 2018, Telefónica, 2019

62

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

#BetterFuture

# Sourcing renewable energy

Though mobile operators are working to implement energy efficiency measures, progressing towards absolute zero emissions necessitates that the industry makes big strides in increasing its consumption of renewable energy, including wind, solar, biomass and hydropower. In light of growing mobile data traffic, the migration to renewables also makes business sense. For example, Telefónica considers that its GHG emissions in 2018 would have been 80% higher without its Renewable Energy Plan; in turn, the plan projects a 6% saving on energy opex by 2020 from switching to clean energy, which could reach 26% in 2030.[91]



Operators are setting goals to expand the share of renewables in their energy mix over the coming years as they focus on initiatives that reduce energy consumption and GHG emissions, and contribute to international environmental protection goals. Several operators are targeting 100% renewable electricity. A few examples include:

| Operator | BT [92] | Telefónica [93] | T··Mobile [94] | vodafone [95] |
|---|---|---|---|---|
| **Target date** | 2020 | 2030 | 2021 | 2025 |

91.　Integrated Management Report 2018, Telefónica, 2019
92.　Digital impact and sustainability report 2018/19, BT, 2019
93.　https://www.Telefónica.com/documents/153952/13347920/Telefónica-Integrated-Management-Report-2018.pdf
94.　"Magenta Goes Green: T-Mobile Commits to 100% Renewable Energy", T-Mobile, January 2018
95.　Sustainable Business Report 2019, Vodafone, 2019

64

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

**Figure 16**

**Within the broader shift to renewable energy, operators are approaching the transition in a number of different ways**

### Self-generation

NTT DoCoMo has developed weather forecast-linked green base stations equipped with solar panels and lithium-ion batteries that can reduce commercial electricity used during normal operations by 10%, compared to conventional green base stations that do not have energy storage or weather forecast-linked capabilities. In addition, the conventional operation time of these base stations is doubled to approximately 63 hours during power outages following such events as natural disasters.

### Power purchase agreements (PPAs)

These are typically long-term renewable energy supply contracts that guarantee an agreed amount of electricity from renewable sources at a fixed price. AT&T has announced one of the largest Corporate Renewable Energy purchases in US history, purchasing 820 MW of wind power.

### Renewable energy certificates

Operators are using energy attribute certificates, including Renewable Energy Certificates (RECs) in the US and Guarantees of Origin (GoOs) in Europe, to demonstrate that purchased or acquired electricity comes from a renewable source. Telia estimates that it has reduced its GHG emissions by 148 ktCO2e, by purchasing 87% renewables in the Nordics and Baltics using GoOs – equivalent to taking 30,000 cars off the road annually.[96]

### Direct sourcing

With direct sourcing, operators pay monthly for existing renewable energy. Over time we should see an increase in direct sourcing as supply grows to meet demand. 100% of the electricity that BT purchases directly in the UK is from renewable sources. BT's equivalent figure worldwide is 87%, as in some markets there is currently no renewable supply or the sources available are not certified as renewable through an internationally recognised scheme.[97]

96. https://www.teliacompany.com/en/sustainability/responsible-business/environmental-responsibility/
97. Digital impact and sustainability report 2018/19, BT, 2019

## RE100's call to action

RE100 is a global, collaborative initiative led by The Climate Group in partnership with CDP, which brings together influential businesses committed to 100% renewable power.[98]

Businesses account for around half of electricity used worldwide. Switching this demand to renewable energy will aid the transition to a net-zero emissions economy. As more companies recognise the need to reduce greenhouse gas emissions and the rapidly falling cost of renewable electricity, they are sourcing renewable power while also supporting the transition in a proactive, meaningful and commercially advantageous way.

The mobile industry has a key role to play in moving to net zero but needs to work jointly with consumers and policymakers towards a greener future. Renewable energy is highly dependent on market forces and the regulatory environment, necessitating collaboration between stakeholders to maximise the benefits of new digital technologies.

"Opportunities for sourcing renewable electricity vary from country to country. We therefore advise operators to explore which option best suits their needs, be it direct procurement contracts such as a PPA, on-site or near-site renewable options, or tradable certificates. RE100 members are becoming more sophisticated in their approaches to sourcing – for example, there is a growing trend to aggregate demand with other companies in the same region to gain economies of scale, which we welcome as a sign of a maturing market." Sam Kimmins, Head of RE100, The Climate Group

98.    For more detail, see: http://there100.org/

**66**

Introduction
and key findings

Industry Impact
on the SDGs

Mobile and
climate change

Accelerating
Impact

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Decreasing value chain emissions

Estimates from the GSMA based on seven operators that disclose scope 1, 2 and 3 emissions, suggest that about 70% of operators' total GHG emissions are categorised as scope 3[99] - approximately two thirds of these on the supply side and a third being downstream emissions. Mobile operators therefore have the potential, and responsibility, to positively influence emissions levels across the value chain.[100] This means working with suppliers and customers to reduce emissions created in the production of goods such as handsets and network equipment, and in the use of products by customers (e.g. from the electricity used when charging mobile devices and other equipment).

BT estimates that scope 3 emissions represent more than 90% of its overall carbon footprint.[101] While this is higher than other operators,[102] it reflects the significant progress BT has made in reducing scope 1 and 2 emissions by improving energy efficiency across its operations and buying 87% of its electricity from renewable sources. It has a target to cut scope 3 emissions in its supply chain by 29% by 2030. To achieve this goal, BT is embedding sustainability criteria in the supplier contract process; facilitating capacity building with suppliers on climate and circular economy principles; benchmarking suppliers, with negotiation of target setting to support improvement; and negotiating discounted renewable energy rates for SME suppliers with its main energy provider.

**Figure 17**

**BT supplier sustainability programme**[103]

| | |
|---|---|
| **Stage of supplier programme** | Started in 2012, extended in 2017 |
| **Targets** | 87% emissions reduction across operations by 2030 and 29% emissions reductions in the supply chain by 2030 – both from a 2016/17 baseline |
| **Key success drivers** | Sharing high-quality expertise and experience with suppliers, encouraging them to share successes |
| **Deployment tools** | BT Better Future Supplier Forum[104] training, support and assessment of suppliers |
| **Major barriers** | Building renewable energy sourcing expertise for non-UK suppliers |

Telia and AT&T are also driving momentum on this front, contributing to lowering GHG emissions through a value-chain approach to climate action. Telia has established a new framework for contracting with suppliers, which will involve including target setting on GHG emission reductions in its supplier selection criteria; requiring that suppliers put in place a goal for reaching zero CO2 for their whole operations; and delivering on that goal by 2030.[105]

AT&T is training sourcing professionals on sustainability in the supply chain, providing the tools necessary to engage its strategic suppliers on sustainable business practices.[106] Through its Supplier Sustainability Scorecard, AT&T is working with its top suppliers on tracking and setting goals for their GHG emissions. AT&T, in collaboration with CDP's Supply Chain programme,[107] annually reaches out to about 500 suppliers to report on emissions. Using industry-accepted methods, it gathers and analyses (and subsequently reports) data on these suppliers' emissions, reduction goals and progress.

99.   This calculation is an average based on analysis of public disclosures of seven operators that fully disclose scope 1 and 2 emissions and a majority of scope 3 emissions (AT&T, BT, Deutsche Telekom, KDDI, NTT DoCoMo, Telefónica and Vodafone). The weighting of scope 1, 2 and 3 emissions for mobile operators will vary significantly depending on several factors, including, but not limited to, their regional footprint and the business model employed. For example, those only employing a network provider model will have significantly lower scope 3 emissions in comparison to those supplying devices to customers.
100.  There are also other emissions which are less significant in volume such as business travel, employee commuting and treatment and disposal of operational waste.
101.  Digital impact and sustainability report 2018/19, BT, 2019. We note that from our analysis other operators report a lower percentage of scope 3 emissions; however, we also note that this may be reflective of how successful certain operators have been to date in reducing scope 1 and 2 emissions, as well as what is included under scope 3 (for example, scope 3 may be a larger proportion of total emissions if more components of the business are outsourced).
102.  For example, Telefónica and NTT DoComo scope 3 emissions are 65% and 58% of their total emissions respectively.
103.  Going Beyond: A guide to integrating renewable electricity into your supply chain, RE100/The Climate Group/CDP, 2017
104.  BT uses its Better Future Supplier Forum (BFSF) to understand suppliers' motivations and supports early movers through this initiative. In the forum, BT shares best practice on environmental issues, performance and improvement. Once a supplier is on board, BT analyses its strengths and weaknesses, identifying opportunities to make a difference. With BT's support, suppliers learn how to capture the savings and quantify the benefits of improvements. https://event.edie.net/supplychain/wp-content/uploads/sites/29/2018/06/edie-Sustainable-Supply-Chains-2018-BT-v1-Tony-Roy.pdf
105.  https://www.teliacompany.com/en/sustainability/responsible-business/responsible-sourcing/
106.  https://about.att.com/csr/home-2015/issue-brief-builder/environment/engaging-our-supply-chain.html
107.  For more detail, see: https://www.cdp.net/en/supply-chain

**Introduction and key findings**    **Industry Impact on the SDGs**    **Mobile and climate change**    **Accelerating Impact**    **67**

2019 Mobile Industry Impact Report: Sustainable Development Goals

## 3.4
## Guiding the mobile industry towards net zero by 2050

As part of the mobile industry's efforts to support the delivery of the SDGs, it is making a specific commitment on SDG13: Climate Action. This commitment reflects the urgent need to accelerate action to limit global warming to 1.5°C by 2050.

While many mobile operators have been working on climate action for some time, the GSMA is bringing the industry together to develop a collective approach, creating a long-term climate action roadmap. The mobile industry, with the ICT sector, will be one of the first industries to develop its own sector pathway to net zero GHG emissions by 2050.

As a starting point on this journey, in 2019, a group of mobile operators – which together account for more than two thirds of mobile connections globally – committed to disclosing climate impacts, energy

and GHG emissions. The next phase will see the development of a decarbonisation pathway for the mobile industry aligned with the Science Based Targets initiative (SBTi).[108]

This goes hand-in-hand with advancing mobile technology innovations in areas such as big data and IoT that can enable energy-efficient and environmental solutions across multiple sectors, including transport, manufacturing, agriculture, building and energy.

108.  See: https://sciencebasedtargets.org/

# 04

# Accelerating impact through partnerships

**17 PARTNERSHIPS FOR THE GOALS**

Effective collaboration between the public and private sectors, as well as collaboration between different industries and sectors, drives significant improvements in the mobile industry's contribution to the SDGs.

This is reflected in SDG 17: Partnerships for the Goals, which seeks to strengthen global partnerships to support and achieve the 2030 targets, bringing together national governments, the international community, civil society, the private sector and other players.

This report has shown that the mobile industry – through the connectivity that it enables and the way in which it operates – continues to drive significant impact across all SDGs. This brings the world closer to the ambitious targets set out in the 2030 Agenda.[109]

To achieve these targets however, current trends need to be accelerated. Significant challenges persist around unlocking the full potential of mobile, particularly in terms of connecting the unconnected and scaling mobile-enabled services and nascent IoT technologies. In Sections 2 and 3, we identified several calls to action for mobile operators, governments and other stakeholders. One of the most important actions required, however, cuts across all SDGs – the collaboration between the public and private sectors as well as collaboration between different industries and sectors.

This report has highlighted that many of the industry's current impacts could not be achieved without multi-stakeholder partnerships – for example, the provision of mobile-enabled financial services and supporting populations affected by disasters. Furthermore, the industry cannot meet its commitments to the SDGs or maximise its impact in the future without effective partnerships. This is particularly the case for achieving a net-zero carbon future, which will require operators to collaborate with the public sector to reduce emissions of the mobile industry and will involve working with other sectors to enable wider GHG reductions through enabling mobile technologies.

The mobile industry and the GSMA fully realise the importance of collaboration in addressing the most pressing global issues, as evidenced by its participation – and in some cases leadership – in several multi-stakeholder partnerships.

109.  Transforming our world: the 2030 Agenda for Sustainable Development, United Nations, 2015

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Examples of partnerships and GSMA initiatives accelerating SDG progress

### Big Data for Social Good (BD4SG)

In partnership with UN agencies, international organisations and mobile operators, the Big Data for Social Good initiative leverages mobile operators' big data capabilities to enable governments to respond effectively and efficiently to many of the world's most pressing health, humanitarian and environmental problems. Mobile data-driven solutions strengthen governments' planning capabilities, enabling them to mitigate risks through better predictions. These solutions also provide new insight to improve decision making and increase the efficiency and effectiveness of their response.[110]

### EQUALS

EQUALS is a multi-stakeholder partnership which was co-founded by the GSMA, UN Women, ITU, ITC and UN University in 2016. The partnership brings together international organisations, the private sector, governments, non-governmental organisations, regulatory agencies and academic institutions with a common goal: to bridge the gender digital divide. The network works to ensure that women and girls are given access, equipped with skills and able to develop the leadership potential to work and succeed in the ICT sector.

### M4D and partners

The GSMA Foundation works with donor partners to drive innovation in digital technology to reduce inequalities in our world. Through these partnerships, the GSMA Mobile for Development (M4D) programmes deliver both sustainable business and large-scale socioeconomic impact for the underserved, in the areas of mobile connectivity, mobile money, energy, water, sanitation, agriculture, climate, identity, disability, humanitarian response and the reduction of the mobile gender gap.[111] Current donors are the Bill and Melinda Gates Foundation, DFAT, DFID, Flourish, the Mastercard Foundation, Sida, SOGE and USAID.

### GSMA National Dialogues

This initiative works at a national level to convene key government ministries and leaders of the mobile industry. GSMA National Dialogues explore the ways in which mobile can act as a positive force for societal change, and facilitate and support collaborative action to drive digital transformation through mobile. Convenings focus on targeted actions, in response to market-specific demand as identified by key public and private sector stakeholders.[112] The GSMA is facilitating these National Dialogues in partnership with Sida and DFID, and is supported by the United Nations Development Programme.

### Nordic CEOs for a Sustainable Future

The GSMA, alongside CEOs of some of the Nordic region's largest listed companies, have joined hands in a common commitment to integrate the SDGs in their respective business strategies, and create a forum for exchange of experiences and exploration of shared initiatives - all with the ambition to speed up the realisation of the world's most important "to-do" list. The initiative also creates a platform for the Nordic Prime Ministers to engage directly with CEOs on how to move from sustainability as a compliance exercise to purpose-driven companies.

---

110.   https://www.gsma.com/betterfuture/bd4sg
111.   For further information see https://www.gsma.com/mobilefordevelopment/10yearsofm4d/
112.   See for example "The Government of Uganda and Stakeholders Commit to Pursue Mobile-Enabled Digital Transformation", GSMA, March 2019.

### UN Secretary General's Task Force on Digital Financing of the SDGs

Recognising that digital financing holds enormous potential to facilitate achievement of the SDGs, the Task Force was set up to bring together a group of leaders from governments, businesses – including the GSMA – the financial community, international organisations and civil society to advance proposals that can help ensure that technologies supporting the digitalisation of finance will advance the SDGs.

### We Care

The We Care initiative convenes mobile operators in a specific country to join forces, as an industry, to deliver solutions with a positive impact on society. Government representatives, regulators, civil society and UN agencies often participate in the initiative ensuring a multi-stakeholder approach to providing responsible and impactful solutions. These in-country initiatives support the mobile industry's commitment to the UN SDG[113] and the Digital Declaration, allowing operators to drive impact at a local level. Through We Care, 64 local mobile operators across 19 countries in Latin America and Africa have committed to deliver solutions on topics such as digital inclusion, environmental care, disaster response, privacy, infrastructure deployment and handset theft.

**THESE INITIATIVES CONTRIBUTE TO ALL SDGS**

The GSMA will continue to work with governments, the international community, other industries and other stakeholders on these initiatives and will consider involvement in new partnerships where they are likely to achieve impact.

At the same time, the GSMA and the mobile industry will continue to report on its progress each year. We will continue to develop and improve the evidence and data used to track operators' impact on the SDGs. With this framework in place, both the industry and the international community will be able to enhance its understanding of impact, progress, challenges and ultimately the action needed for the mobile industry to harness its full potential to deliver the SDGs.

---

113. https://www.gsma.com/latinamerica/wecare/

2019 Mobile Industry Impact Report: Sustainable Development Goals

# Partnerships for cross-cutting impact

Ubiquitous, mobile supercomputing. Intelligent robots. Self-driving cars. The evidence of dramatic change is all around us and it's happening at exponential speed. We have the potential to connect billions more people to digital networks, improve the efficiency of organisations and even manage assets in ways that can help regenerate the natural environment, potentially undoing the damage of previous industrial revolutions. We need to remind ourselves that all of these new technologies are first and foremost tools made by people for people.

The SDGs give us all a framework within which to take collective responsibility for and collaboration on issues of our mutual interests – with the last and most important SDG17 to "...revitalise the global partnership for sustainable development". Without this one, the rest just won't be possible.

The World Economic Forum fully realises and promotes the importance of public-private collaboration in addressing global issues. We work alongside organisations such as the GSMA in support of private sector efforts towards achieving the SDGs. This report shows great examples of how the mobile industry is turning commitment into action. I call on the industry to continue to help shape a future that works for all, where no one is left behind.
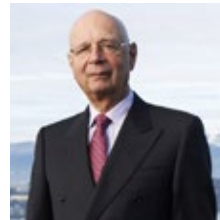
**Professor Klaus Schwab**
Executive Chairman
World Economic Forum

# #BetterFuture

For further information please visit
the GSMA website at www.gsma.com