G20 CIRCULAR CITIES CONFERENCE

12 July 2021

Online event

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Take away messages

Importance of cities in the transition towards the circular economy:

- Cities are resilient environments, centres for the industrial and social innovation and strategical hubs for the circular economy.
- Cities work alongside national governments to shape and adopt new business models, partnerships, skills and capacities needed for a just transition to a low carbon economy.
- City governments have core competencies and funding for most policy areas underlying the circular economy. They typically manage solid waste, water infrastructure, spatial planning, land use, and they enforce regulation on the building and construction sectors.
- Cities are those pilots where circularity is experimented, from different perspective. Activities that are experimented and considered niche can become mainstream when favourable conditions are developed and eventually break traditional patterns in value chains and markets.
- Cities are place for innovations and learning and engines of economic growth. They are well placed to pioneer solutions for system changes and to demonstrate the transition in practice.

Main obstacles towards the transition for cities:

- Insufficient financial resources, allocation of funds across levels of government, access to funds and financial risks are amongst the most prominent obstacles for cites. In addition, regulation does not always fit to match innovation with the environmental, health and economic conditions needed to facilitate the use of second-hand materials, water reuse and land allocation.
- Lack of local circular economy strategies. To change the system is important to embed circular economy into city policies.
- Difficulty in collaborating with private sector.
- Lack of knowledge on circular economy, for which getting a clear roadmap is important; as well overcoming fragmentation across policy areas towards a holistic systemic change.

What national governments can do to unlock your potential at the local level:

- Promoting green jobs and skills update.
- Contributing to sustainable production and consumption patterns.
- Aligning circular economy strategies across levels of government.
- Contributing to conducive and smart regulation towards the circular economy in practice, with implementation on the ground form civil society, business and government.
- Allowing fiscal power and decentralising decision-making.
- Enhancing city to city collaboration to upscale circular economy solutions.

What cities need to do to advance the circular economy agenda:

- Showing political will.
- Taking action beyond the creation of roadmaps and strategies.
- Ensuring that targets set out in national legislation are met.
- Promoting incentives and accountability tools towards a circular economy practice. For example implementing “energy and environmental rating systems” for buildings and regenerating cultural building heritage.
- Enhancing public awareness and citizens and business empowerment.

Opening Remarks

Laura D'Aprile, Director, Department of Ecological Transition, Ministry for Ecological Transition, Italy

Promoting a circular economy in cities is a key priority for the G20 Italian presidency. As such, this conference aims to push forward some suggestions for national governments to accelerate the ecological transition and a resource efficiency dialogue with circular cities. The COVID-19 pandemic highlighted **the importance of cities as resilient environments, centres for the industrial and social innovation and strategical hubs for the circular economy.**

Within a circular city approach, the implementation of the efficient use of resources through waste prevention and improved waste management will be at the core of local and national actions, in order to:

- **Prevent waste production**, by shifting from the ownership to service based models.
- **Change consumption and production patterns** towards a less wasteful society.
- **Keep resources in use as long as possible** by extending the life of goods through eco-design, implementation of the extended producer responsibility paradigm and laws. For example, in the building sector, to extend the useful life of buildings, through the renovation of historical buildings, it is important to push for the maintenance of the cultural heritage assets, paying attention to the choice of material and designing modular buildings that can be repurposed at the end of their lives.
- **Transform waste into new resources**, by fostering recycling, transforming wastewater into new material and organic waste into new fertilisers to prevent soil consumption and soil pollution.

In order to make this happen, governments and citizen need to foster transparent information and to set up conductive regulation in compliance with health and environmental standards, as well as financial support, identifying the right economic incentives that can affect citizens' behaviour.

Citizens' behaviours and education of young generation are key steps for the ecological transition. In addition, rethinking cities under 15 minutes perspective is essential to make them inclusive, safe, resilient and sustainable. Smart circular communities should also be fostered to implement green and sustainable built environment solutions.

Lamia Kamal-Chaoui, Director of the Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD

In the post COVID-19 crisis, business as usual based on a linear economy of "take, make and dispose" is no longer an option. In response to the pandemic, many G20 countries committed to a "green recovery" through stimulus packages of unprecedented scale. Yet, only a very small share of the recovery measures announced so far – around 1% of total funds – addresses resource efficiency and waste management.

G20 countries need step up their efforts to seize the opportunities of a circular economy that creates value - while reducing the environmental impact of the use of resources and waste disposal. **The OECD paper "Towards a more resource-efficient and circular economy: the role of the G20"** that the OECD prepared for the current G20 Presidency outlines how G20 countries can set a common policy vision on resource efficiency and the circular economy for different levels of government. This paper includes a specific chapter on the role of cities, as they are "agents of change."

Cities work alongside national governments to shape and adopt the new business models, partnerships, skills and capacities needed for a just transition to a low carbon economy.

The paper builds on the expertise of the OECD Centre for Entrepreneurship, SMEs, Regions and Cities and in particular on the Programme on the Circular Economy in Cities and Regions. Since 2018, the Programme has been working hand-in-hand with over 1 000 stakeholders to advance a place-based approach to the circular economy. One of the result of the Programme, was a synthesis report on "The Circular Economy in Cities and Regions" that builds on a survey across more than 50 cities. Moreover, a number of case studies in cities have been produced, such as in Valladolid and Granada (Spain), Groningen (Netherlands), Umea (Sweden), Glasgow (United Kingdom), Montreal (Canada), Tallinn (Estonia), as well as in Ireland. The OECD Programme organises regular Roundtables to engage with cities and experts and share knowledge and experience.

There are many reasons why cities matter for the circular economy: cities produce 80% of greenhouse gas emissions, consume two-thirds of the energy, and generate 50% of global waste. At the same time, we know the global population is becoming more urban – the population living in cities has more than doubled over the last 40 years, and is expected to increase by another 40% by 2050, according to OECD projections. This means new infrastructure, services and housing will be needed, and the pressure on natural resources will keep increasing.

At the same time, **city governments have core competencies and funding** for most policy areas underlying the circular economy. They typically manage solid waste, water infrastructure, spatial planning, land use, and they enforce regulation on the building and construction sectors. OECD data also show that on average across the OECD, sub-national governments are responsible for 55% of climate and environment-related spending, and for 64% of climate related investments. Therefore, cities have a critical role to play.

The OECD report on "The Circular Economy in Cities and Regions" **shows that two-thirds of surveyed cities (73%) do not have enough funding to implement the transition to the circular economy.** This means that, too often, only small-scale, low-risk projects materialise, with limited impacts in terms of job creation and positive environmental effects.

There are also regulatory obstacles at the local and national level. For instance, around the type of waste that can be transformed into new resources, or how to reuse construction waste, reclaimed water and sludge compatibly with health and ecological standards. In addition, cities that are engaged in the circular economy tend to follow a sectoral, rather than a systemic approach. The circular economy is not just about waste, but also water and other resources and materials. And yet, in two-thirds of the surveyed cities, municipal departments are not collaborating among themselves to make sure that the outputs of one sector can be inputs for another one.

To advance the circular economy, cities and national governments have to work hand in hand. This is why today's conference, in the framework of the G20, is so important. **Cities can be a role model and promote a circular economy culture. Cities can encourage systems thinking across the public, private and non-profit sectors.** And **cities can put in place the economic instruments and public procurement conditions** needed for the circular economy to grow and thrive.

Realising the opportunity of a circular economy requires partnership and co-operation across different levels of governments and stakeholders. National governments can and must leverage the potential of cities to engage, through incentive mechanisms. Many countries, such as France, Spain, and the Netherlands, have developed strategies on the circular economy that are stimulating actions at the local level. But much more remains to be done:

- National governments can **accompany the transition through regulatory tools**. For example, many countries are phasing-out single-use plastic bags, to decrease material use and prevent pollution.
- Some countries, such as the United Kingdom, **tax the extraction or use of natural resources**. Such tools can provide significant incentives for local firms to seek new, cleaner solutions.

- National governments can also contribute to **educational and capacity building programmes**, both for local administrations and entrepreneurs.
- Finally, governments can help create the necessary evidence, by **harmonising data collection and indicators** at national and the local level.

The COVID-19 offers an opportunity for cities to rethink urban policies towards more sustainable production and consumption patterns. The pandemic triggered initiatives that can also be beneficial for the circular economy, such as the extension of bike lanes and a focus on local food production. **We can use this momentum to accelerate the transformation of G20 cities and increase their resilience.** The OECD stands ready to help and to strengthen co-operation with the G20 on this important agenda.

Circular economy in cities: The state of play

Moderator: Marco Mari, President, Green Building Council Italy and Member of the G20 Environment Expert Committee

The Governance of the circular economy in cities and regions, Oriana Romano, Head of Unit, Water Governance and Circular Economy, CFE, Organisation for Economic Cooperation and Development (OECD)

The OECD (2020) report on The Circular Economy in Cities and Regions provides and overview on the state of the art of the circular economy across more than 50 cities and regions in OECD and non OECD countries. While the circular economy is not a new concept, for many local government it represents an incipient framework to rethink urban policies towards a more efficient use of resources. In particular, results show that 57% of cities are new comers.

There are several levels of progress towards the transition to the circular economy. A total of 37% of cities have already implemented long-term visions, such as Amsterdam, London, and Paris. **Beyond the waste sectors, a key sector highlighted by these cities is built environment**. This means apply circular economy principles to the planning, the design, the operation and end of life of buildings. Many initiatives, from modular buildings to food waste reduction, are based on **pilot and experimentations**. Nevertheless, it is important **to scale up** these initiatives to be able to reach the expected economic, environmental and social impacts. Public procurement and digitalisation would play an important role with this endeavour.

Cities signal a number of **challenges** to transition from a linear to a circular economy: beyond technical solutions, which do exist, the problem is to put in place the right governance conditions to shift from a linear to a circular system. Insufficient financial resources, allocation of funds across levels of government, access to funds and financial risks are amongst the most prominent obstacles for cites. In addition, regulation does not always fit to match innovation with the environmental, health and economic conditions needed to facilitate the use of second-hand materials, water reuse and land allocation.

Cities and regions can promote, facilitate and enable the circular transition. In particular, as promoters, cities can define roles and responsibilities and set up a long-term view to reduce the fragmentation among existing circular economy initiatives. As facilitators, they can enable dialogues across stakeholders and coordination across levels of government. Finally, as enabler, cities can provide the needed condition to put in place solutions such as regulation, financing, capacity building, innovation support and data and assessment.

Enhancing resource efficiency in cities, Sharon Gil, Programme Officer, UN Environment Programme (UNEP)

According to the UNEP, **the circular economy transition is a necessary transformation to overcome the triple crisis: biodiversity loss, climate change, and pollution**. The underlying factor on this is the unsustainable consumption and production patterns.

UNEP recognises that while environmental concerns are central to circularity, ensuring well-being of people is equally important**.** Building on an urban metabolism analysis of 5 cities around the world, UNEP developed a methodology that not only focuses on the city level material use of cities globally, but also looks at measuring circular economy jobs. This acknowledges **employment as a city priority and the importance of putting people at the centre.**

For each city, the solution to accelerate circularity is different, but in each one opportunities exitfor circular governance and innovative solutions. UNEP developed a tool to analyse circularity of over 200 cities globally to better understand circularity at local level. Some highlights are the following: i) there is a **strong relationship between economic diversity and circularity**, which raises questions of building entire cities around a single large employer; ii) to achieve circularity, a city must look beyond its boundaries and collaborate with national government. In fact, there is an **economic dependency outside the city** boundaries (e.g. some capital cities have a significant percentage of their population working on the agricultural sector).

When COVID-19 hit the global economy in 2020, an estimated 255 million full time equivalent jobs were lost but we also know that moving towards CE will result in trillions EUR output by 2030. **A circular economy transition needs to be part of the plans to build back better**. It is key start building circularity in cities and strategic areas. Such as buildings and food sectors. UNEP has developed a building passport and food waste index to support these areas. UNEP stands ready to support of all levels in the development of practical and relevant solutions to build circular economy in cities.

Circular Cities and Regions Initiative, Pavel Misiga, Head of Unit, Circular Economy & Biobased Systems, Directorate-General for Research and Innovation, European Commission

The circular economy transition is an innovation agenda. As such, Research and Innovation has an important role. The circular economy is not just about the technological innovation, it is a societal innovation combining innovation in business models, governance and societal changes.

Nevertheless, nowadays, the circular economy is more niche than mainstream. The European economy is not circular. Only about 10% of the economy can be considered as circular in Europe. As such, the transition progress is only starting.

Cities are those pilots where circularity is experimented, from different perspective. Activities that are experimented and considered niche can become mainstream when favourable conditions are developed and eventually break traditional patterns in value chains and markets. This is why the European Commission considers cities as pilots of the circular economy.

There are some enabling conditions that make cities dynamic actors for change: cities are important market actors; there is a very intensive material metabolism and they accumulate material stock of society. Cities they can influence different kind of economic agents. They can also reach citizens and consumers, which is key, as it is difficult to change linear value chains to circular without change going along the value chain.

However, some conditions need to be in place: investment is needed for substantial changes, including investments in infrastructure; technical capacity of local governments should be built, especially the case

of small cities; political priorities should move beyond the short term and local governments should embrace a certain level of commitment.

National governments can help cities and regions: they can create a favourable policy framework, in terms of on legislation (e.g. on how to deal with products, materials, waste) and incentives, such as fiscal ones and public procurement.

The European Commission Circular Cities and Regions Initiative supports urban regional circular demonstration project. One quarter billion EUR in form of grants will be allocated to cities. Cities can apply for grants to demonstrate, innovative and systemic circular solutions at urban and regional level. Soft technical assistance, ranging from political engagement of local governments, supporting policy developments, capacity building will be delivered by partner organisations, including the OECD and the EIB and other organisations like ICLEI.

Financing the circular economy in cities, Jonas Byström, Lead Engineer, Circular Economy Division, European Investment Bank (EIB)

The EIB committed to dedicate 50% of lending for climate and environmental sustainability. Circular economy contributes to both of them. The EIB has a particular focus on cities. **Cities can be ecosystems for the circular transition, and can be catalysts to support this development.** Beyond lending, the EIB provides blending with grants and guarantees, as well as technical and financial advisory. The Bank is developing two new initiatives together with the European Commission's Directorate-General for Research and Innovation: the Circular City Centre, which will provide knowledge sharing and awareness building; and the Circular Economy Technical Assistance Facility.

The EIB also developed the **Circular City Funding Guide**, which includes information for funders and fund-seekers. In the last 5 years, the EIB has provided 2.7 billion EUR. Financing 100+ projects in several sectors. The characteristics of circular economy projects varies a lot in terms of business models (from traditional circular value recovery models to those based on leasing and sharing models); size and maturity of the projects/company (start-ups and big companies); and context and risk (technical and legal ones). This implies different types of financing, such as investment loans, framework loans, multi-beneficiary investment loans, thematic impact finance and equity funds.

Circular innovation in cities, Sarah O'Carroll, City Lead, Ellen MacArthur Foundation

Cities are well placed to pioneer solutions for system changes and to demonstrate the transition in practice. The circular economy can support the creation of low carbon resilient cities, contributing to the delivery of SDG 11 concretely, as well as several other SDGs including SDG 9 and 12. The circular economy can also contribute to tackling global challenges, including climate change, biodiversity loss, waste and pollution, whilst also delivering on urban priorities such as housing, mobility and economic development, in a way that supports prosperity, jobs and communities.

City governments are critical actors in accelerating the transition to a circular economy. They have a key role to play involving thriving liveable and resilient societies, where waste and pollution have been designed out of the products, materials are kept in use and natural systems are regenerated. **By embedding circular economy principles into different urban policies, city governments can bring about changes in the way that materials are used and managed in the city**.

Cities are facing three sets of **challenges** transitioning towards the circular economy:

- **Lack of city orientated circular economy strategies**. To change the system is important to embed circular economy into city policies to set a common direction of travel. City governments could develop circular economy roadmaps or strategies, but they could also embed circular economy into other policy areas such as climate or resilience.

- **Misalignment between regulatory frameworks**. Existing regulatory frameworks have been designed for the linear economy. There can also be misalignment of policy schemes and incentives across different tiers of government creating barriers to implementation of circular economy initiatives. Policy makers can create mechanisms to facilitate two-way feedback loops with business and research communities, strengthening business commitment as well as supporting policy design and implementation. The Green Deal approach in the Netherlands brings together policy makers, companies and NGOs to provide an open feedback loop on how policies will fit into circular economy opportunities that will be developed in practice.
- **Recognise that no one can act as a system alone: collaboration is critical**. City governments do not always know how to collaborate with the private sector, and vice versa. When city governments are exploring innovative public-private partnerships it can be helpful to see where these have worked (even outside of circularity). City governments also have financial and capacity gaps. Partnerships could be effective to address funding and capacity gaps, whilst still allowing the city governments to be a key stakeholder. Example: #WearNext, an awareness raising campaign that EMF delivered a collaboration with NYC agencies and fashion industry players.

The circular economy should been send as a cross-government agenda with multiple benefits. National governments can support the creation of common direction of travel and inform upstream decisions in their capacity to set the regulatory incentives and disincentives, and the associated enabling conditions. This includes: stimulating design for the circular economy, managing resources to preserve their value, supporting the underlying economic conditions and incentives to deliver a circular economy, investing in innovation infrastructure and skills and fostering collaboration to change the system.

Circular economy in cities: Putting frameworks into practice

Moderator: Aziza Akhmouch, Head of the Cities, Urban Policies and Sustainable Development Division, CFE, OECD

The case of Curitiba, Brazil: Cris Alessi, President of Curitiba's Agency of Development and Innovation

The city developed a wide range of programmes related to the circular economy. The Recycling Programme started in the nineties. In 2017, Curitiba became a member of the **Fab City Global network** with the aim of developing a new urban model based on innovation, circular economy and new technologies. The city organised the **Climate Change Forum** resulting in the "*Plano de Ação Climático*" of the city. One of the objectives of this plan is to reduce the disposal of waste to the landfill to 10% by 2050. Today 50% of the waste goes to the landfill. "***In Curitiba, the circular economy is a new perspective on governance***". In 2019, in partnership with the European Comission, the city organised an international forum to discuss circular economy and carbon reduction. The question of green buildings was also addressed since Brazil is the 5th country delivering the highest number of Leadership in Energy and Environmental Design (LEED) green certificates. Curitiba holds about 20% of green buildings according to the LEED green building certification. The city also created a design plan and a green technology centre to train artisans, designers and the cultural community on sustainable development, recycling, and circular economy more broadly. Through the Ecosystem Recycling Program, 900 waste pickers are organised in cooperatives. Moreover, the Cycle Food Project aims is to reduce food waste and sustainability. For all these projects, cooperation within the local ecosystem (start-ups, businesses, NGOs, foundation, universities) is key. The city will improve its communication, R&D and innovation and new technologies, public policies.

The case of Montréal, Canada: Josée Chiasson, Director of Economic Development

There are at least three enabling conditions to accelerate the circular economy:

i. **The business community has to be engaged**: in Montreal, the economic development department is driving the process even if other departments such as the climate change and environmental services departments are also involved. In fact, it is key that the private sector takes into consideration the social and environmental aspects of its activities.

ii. **A clear roadmap is needed**: there is a need to put in place a structured process, which helps to identify opportunities and how to leverage them. Montreal is currently analysing the material flows and collecting data – in particular, the city is conducting sectoral analysis in the fields of food, residual material, sustainable mobility and the building sector - and has initiated a process to draft the circular economy strategy with the OECD.

iii. **The creation of an ecosystem**: the city is providing financial support as well as strategic advice to stakeholders in order to support business towards circular economy strategies.

The city is facing a number of obstacles in its transition to the circular economy. There is a need to:

i. **Align all our legislations at all levels of government**: the circular economy is still relatively unknown so it is important to sensitise all the stakeholders on the best practices to adopt and emphasise on the opportunities it offers as well as initiate discussions around the legal dimensions of the transition to circular economy.

ii. As we "cannot improve what we can't measure", it is key to **establish clear objective and indicators in order to measure this transition**.

iii. Move from a personal motivation to a **systemic motivation**.

National government can encourage and replicate **sustainable financing solutions** with the private sector. Montreal has initiated a partnership with a private investment fund led by FONDACTION, a circular economy fund. National governments can **reform the legislative framework** and support programmes to better integrate environmental externalities in economic policies and facilitate the development of new structures that will modify the consumption patterns. Finally, they can create an ambitious package of measures on the circular economy with a generous call for projects, which will **strengthen competitiveness**, support sustainable economic growth and create new jobs.

The case of London, United Kingdom: Wayne Hubbard, Director of the London Waste and Recycling Board

London started the circular economy transition around 2014. Since then, a series of documents on the circular economy have been developed including the Circular Economy Roadmap in 2017. These documents helped identify sectoral areas, which are important for the city such as: environment, the built environment, food, plastic, electronics, and textile as well as enabling factors. The city of London has developed a range of programmes and projects. For example, the **Business Transformation Programme** through which "***we want to make circular economy everyone's business***". It consists of developing venture capital funds and providing grants and business advice to companies. London also supports **behaviour change** as "*Londoners can help save the world one behaviour at a time*". Enabling this narrative gives citizens a powerful motivation to take action. The city explores how circular economy can support the transition to a low carbon economy, measuring carbon footprint and territorial emissions. In addition, the circular economy is part of the post-COVID-19 economy recovery efforts: in London it is a "mission focused recovery", in particular the green new deal mission. Addressing circular economy in this area will foster job creation and a resilient recovery, starting at the neighbouring level.

There are a number of barriers including the lack of knowledge on circular economy, for which getting a clear roadmap is important; as well overcoming fragmentation across policy areas towards a holistic systemic change. **National governments** need to **ensure that cities have the freedom (financial and regulatory), flexibility and capacity to implement policies on the ground**. The fiscal policy needs to be revamped. Finally, "cities lead, cities act and governments talk". However, more acting is needed.

The case of Paris, France: Florentin Letissier, Deputy Mayor of Paris in charge of circular economy

The development of circular economy models depends on **consumption patterns** but also on the opportunities to guarantee move fairly towards circular business models. For example, in France, the price of land is very high. As such, disruptors often have fragile economic models, which cannot compete with linear economic models.

Cities have many ways to accelerate the circular economy transition. For example, Paris shows a strong **political will**. The Paris Circular Economy Plan 2017-2020 to scale up circular economy is structured around 5 priority areas: textile, electronic equipment, the built environment, zero plastics, and logistics. **Public procurement** and support to small companies are important as companies are often too small to access large contracts and they need to pull forces together to access the market.

National government should **change the legislation** to allow good practices to develop. For example, under the French law, everything that belongs to the city of Paris belongs to the public domain, so it is impossible to give it away as long as it funded by taxes. As such, Paris does not have the right to give away computers belonging to the city of Paris because of the legislation.

The U20 and the circular economy: Luca Montuori, Vice Mayor City of Rome, Italy and U20 presidency representative

Decarbonizing buildings is key. They must be designed according to the principles of circular buildings (e.g. life cycle). Reusing/regenerating historical buildings in Italy will be an asset for the future: many historical buildings in Rome need to be reused. "*We do not need a museum city; we need an evolving city*". To foster the circular economy, cities should support international protocols to apply to heritage buildings; **start a dialogue with research organisations and regulate the market**. National governments can accelerate this transitions. Cities need more power in Europe. Dialogues with large investment funds are needed, and the market should be regulated.

Learning from G20 members' experiences

Moderator: Oriana Romano, Head of Unit, Water Governance and Circular Economy, CFE, Organisation for Economic Cooperation and Development (OECD)

Hervé Boisguillaume, Head of the International Urban Planning and Housing Mission, Ministry for the Ecological Transition, France

National circular economy policy in France is based on multi-partnership action linked to a circular economy roadmap launched three years ago. National programs for sustainable and resilient circular cities have been launched, with objectives and tools to help cities promote the circular economy schemes:

- ***Ecoquartiers*** **or ecodistricts**: Mayors must take 20 different commitments to obtain the Eco district label. It is a huge success in France, with over 600 labelled districts. Japan, Colombia and Tunisia have also joined this label, with more to come in Africa.

- **Industrial demonstrators for sustainable cities**: there are 15 pilots in France.
  - *Rêve de scènes urbaines* in the future Olympic Games village: the aim is to have a low-carbon and circular district for the Olympics based on technical innovations for energy efficiency as well as slow and low-carbon mobility.
  - *Cycleterre*: Created to promote the reuse of excavated soils from metro works.
- **Dedicated program "*Action Coeur de ville*" for small and medium sized cities**: the objective is to have urban requalification of city centres, and to avoid artificialisation of soils in sprawling suburban areas and increase population density. The national government provides financial, technical and administrative support. A new fund has been launched within the recovery plan for urban action on former deprived land (industrial, railway, military zones).
- "***Territory of Innovation***" initiative: cities such as La Rochelle (which will be the first zero-carbon pilot site in France by 2040) are taking actions on energy, mobility and circular economy to achieve carbon neutrality.

To advance the circular economy agenda, cities need political will and action between municipalities and state level.

Arnoud Passenier, Strategic International Advisor on Circular Economy, Ministry of Infrastructure & Water Management, The Netherlands

Cities have active networks to find new solutions and technical and social innovations to address the circular challenge. Networks are key – whether local, regional or national – as they help us to learn from each other. Creativity is key to enable solutions.

The Netherlands started its circular journey with companies on raw materials governance. A **green deal between the national government and cities and regions** was signed to learn from each other, share best practices, and harmonise monitoring systems. A circular toolbox was developed for local governments. The Dutch mind-set views the national government as a partner, which does not define what must be done at the local level, but it cherishes local initiatives and sees how ecosystems can be created. **Cities are ideal to create those innovations and scale them up**.

Cities have shown that many initiatives can be replicated elsewhere. Two interesting examples from the Netherlands include **industrial symbiosis** in industrial parks, and the creation of **circular craft centres** that combine the collection of municipal waste with the creation of new products via reuse, repair, refurbishment and repurpose at the local level. Freedom and flexibility are essential, so the Dutch government is reluctant to provide national guidelines or regulations. The government should adapt to the market, not the other way around.

To advance circular economy agenda, taking action beyond the creation of roadmaps and strategies is essential.

Novrizal Tahar, Director of Solid Waste Management, Ministry of Environment and Forestry, Republic of Indonesia

Indonesia has adopted the circular economy concept via the **Efficient Indonesia 2050** and its medium-term development plan to 2024. To accelerate the circular economy transition, the government has developed an integrated policy strategy looking at upstream, downstream and midstream solutions e.g. waste prevention regarding single-use plastics; and a joint decree of three ministers on the affordability of raw materials for industry to avoid importation at the midstream level.

The objective of the Indonesian government is to **facilitate the implementation of the circular economy across all types of businesses**. The Indonesian government is fully aware of the need for collaboration

among stakeholders, including in formal and informal markets, to accelerate the transition towards the circular economy.

To advance the circular economy agenda, Indonesia wants to ensure that targets set out in national legislation are met.

Abdulaziz Alshaibani, Deputy Minister for Water, Kingdom of Saudi Arabia

Growth in many countries exceeds natural regeneration rates, highlighting the need to increase circularity. **Circularity can ensure integration and maximize the use of resources**. Ensuring an adequate amount and quality of water is fundamental for sustainable development and the achievement of SDGs. The circular economy model can optimise resource use, reducing the generation of waste. Saudi Arabia has an arid environment and limited natural water resources. Over 80% of Saudi citizens live in urban areas. Socioeconomic development over the past 40 years has been unprecedented. Saudi Arabia's Vision 2030 is built around three themes: a vibrant society, a thriving economy and an ambitious nation. In line with Vision 2030, the Ministry for Water developed a national water strategy in 2017. This strategy is already being implemented and many of its goals in reforming the water sector and improving the services have been achieved. Treated sewage effluent used/reused is central to implementation of a circular economy model: 20% of treated wastewater is currently used, planned to reach 70% by 2030. Riyadh has plans underway for the reuse of treated wastewater in the Green Saudi Initiative, and other agricultural and industrial purposes, for instance.

Given the importance of water availability and quality, the Kingdom during its presidency proposed the annual Dialogue on Water, which was adopted by the G20.

To advance the circular economy agenda in an integrated approach, we shall develop effective legal and intuitional framework; encourage private sector participation; invest in research and innovation; and implement comprehensive communication strategy.

Jane Nishida, Acting Assistant Administrator of the Office of International and Tribal Affairs (OITA)

It is important to ensure that the transition to sustainable/circular cities look at **green jobs**, which is one of the priorities of the current US government. Also, it is key to **create synergies between governments at all levels, businesses, NGO's, and citizens.**

Many of national governments across the G20 recognise the important role of cities. In the US, the role of sustainable development lies with the states and cities, e.g. in terms of land use and smart growth policies. The role of national governments is to provide resources. There are many opportunities for city partnerships with national governments, businesses and citizens, including the innovative mechanisms for **city partnerships**.

To advance the circular economy agenda, public awareness and empowerment can help the executive and legislative branches to better understand the role of local governments.

"Towards a more resource-efficient and circular economy" – OECD Background report and next steps

Moderator: Marco Mari, President, Green Building Council Italy and Member of the G20 Environment Expert Committee

Shardul Agrawala, Head of the Environment and Economy Integration Division, OECD Environment Directorate

The OECD paper for the Italian Presidency of the G20, "Towards a more resource-efficient and circular economy", will be launched at the G20 Environment Ministerial on 22nd July. The focus of the paper has a broad perspective, but it also includes circular cities.

According to OECD projections (2019, OECD Global Material Resources Outlook to 2060), material use is expected to less than double by 2060, but the trends are different across countries and materials. In BRIICS countries, the current rapid increase is expected to continue for the next decade, slowing down thereafter. Certain types of materials, especially metals, are expected to increase considerably. The fast rate of increase in the rest of the world is partly due to the scale of infrastructure remaining to be built. **G20 countries account for 75% of material use and 80% of GHG emissions resulting from material use, so any G20 action will have significant consequences.**

One of the consequences of material use is the emission of GHG. In 2011, almost 45% of total GHG emissions were linked to the material cycle. Projecting to 2060, those emissions will more than double. GHG emissions from certain materials, such as concrete (12%), are significant. Other environmental impacts include toxicity, eutrophication, particulate emissions, and acidification, among others. These impacts vary across materials, however, environmental impacts are much higher for primary than secondary materials. Thus, moving towards the use of secondary materials reduces environmental impacts.

The transition to the circular economy requires not just closing material loops, but preserving value for as long as possible. Different material loops such as industrial symbiosis or the sharing economy have given rise to different business models such as circular input models, waste value models, lifespan models, platform models and product-as-a-service models. However, the market penetration of these models is limited (less than 15%), and most circular business models are restricted to economic niches. Government policy can increase the scale-up of these solutions.

There is momentum to move towards a more resource-efficient and circular economy:

- National strategies for sustainable materials management, resource productivity or the circular economy have been launched in various G20 countries.
- Resource efficiency and waste challenges differ across G20 countries, depending on a country's context, economic structure and stage of development.
- Emerging economies still face significant waste collection and recycling infrastructure challenges, as well as the need to move to higher value loops.
- International action has been taken, such as the G7 Alliance on Resource Efficiency and the annual G20 Resource Efficiency Dialogues provide a platform for exchange.

Three key **challenges** remain:

- The policy landscape is fragmented, focusing on addressing specific materials, products, lifecycle stages and market players.
- The challenge of integration and coherence between policies.

- The risk of shifting environmental burdens from one location, country, medium or phase of the lifecycle to another.

These challenges highlight the need for **cross-sectoral policies as well as international co-ordination**, where the G20 can play an increasingly important roles. Key recommendations for the G20 include:

- **Mainstream resource efficiency and circular economy principles in domestic policies**:
  - Promote resource efficiency through a policy mix covering the full lifecycle of products.
  - Align sectoral policies with resource efficiency objectives.
  - Align COVID-19 recovery measures with resource efficiency objectives.
  - Strengthen policy development and evaluation through better data and analysis.
  - Take a step-wise approach to transition from waste to resources.
  - Fully leverage the role of cities.
- **International cooperation to advance the circular economy**:
  - Support businesses in value chain management.
  - Harmonise environmental labels and information schemes.
  - Alleviate barriers to trade and investment in environmental goods and services to ensure the diffusion of best available environmental technologies.
  - Mainstream resource efficiency and material recovery into official development assistance systematically.

Concluding remarks

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Cities have an important role to play in the ecological transition, while social aspects should not be forgotten. Although there may be various definitions of the circular economy, goals and solutions are common across countries and levels of government. This Conference highlighted that political will is needed for sustainable development and the circular development of cities; the empowerment and awareness of citizens are key, especially women and younger generations who suffered the most from the COVID-19 crisis; financial support is needed, as well as cooperation and coordination between private and public actors and above all, between different government levels. In addition, regulation needs to be smart, not binding, since the ecological transition is evolving fast.