UNFCCC COP 25, Marrakech Partnership for Global Climate Action (MPGCA)

High-level roundtable

Circular economy: Cities and buildings as agents of climate action

Concept Note

IFEMA - Feria de Madrid, Avda. del Partenón, 5 28042 Madrid, Spain, Pedro de Atacama Climate Action Room, Hall 4, Blue Zone

10 December 2019, 10:00-11:30

Co-leads: Global Alliance for Buildings and Construction (GlobalABC), ICLEI

Support: FMDV, REN21, CCAC, WBCSD, ICC, UN-Habitat, SLoCaT, SIWI/AGWA, FAO, ITF
Circular economy roundtable: Cities and buildings as agents of climate action

Three quarters of resource-use and greenhouse gas emissions already come from cities, and trends in urbanization, motorization, population and economic growth will further drive up these numbers if we don’t get smarter and more sustainable in the way we live, consume, travel, and produce. Many cities face serious air, water and waste pollution; direct result of unsustainable consumption and production patterns, making citizens’ health a key imperative for action. Taking a dual lens of SDGs 11 – Sustainable Cities, and 12 – Sustainable Consumption and Production will allow to identify multi-level solutions able to generate multiple benefits.

According to the IPCC special report, restricting climate change to 1.5°C would need “rapid and far-reaching” changes around energy use, industry and buildings design, as well as the wider planning of cities and infrastructure. The International Resource Panel publication “Weight of Cities” found that savings in the order of 30-60 percent, for both resource use and GHG emissions, can be realized by leveraging connections, interactions, and resource sharing across multiple urban systems. Integrated urban planning, including buildings and construction, transport and land use planning, sector coordination and optimization, and behavioural changes will be required.

A circular economy offers a framework and tools to extend mitigation strategies beyond sectoral and territorial approaches. From reducing energy demand, using renewable energy, protecting carbon sinks and addressing non energy emissions, circularity is an opportunity to achieve climate neutrality through multiple avenues while at the same time supporting other sustainability agendas, such as biodiversity protection and adaptation to environmental change. Cities and regions around the world are operationalizing the circular economy across a wide array of material flows and sectors, such as housing, food, water, energy, waste, chemicals, transport, or consumer goods.

The buildings and construction sector in particular, with its almost 40% share of energy- and process-related GHG emissions, and 36% of final energy demand emissions has a critical role in the circular economy transition. How? By considering buildings as materials banks, by making housing decisions based on strategic densities, allowing for modularity in the use of existing and future buildings, designing buildings for reuse/disassembly. Including renewable energy alongside stringent energy and water efficiency when constructing buildings can also cut emissions. Half of all buildings standing in 2060 have not yet been built, leaving us with a narrow time window to get it right and to construct buildings and cities for the future. Circularity is an essential element in achieving this and, cities can take this opportunity to improve efficiency and environmental impact by embedding circular economy principles in urban infrastructure and services.

This session will look at how circular economy principles can be applied in the built environment to drive climate action. The role of cities, buildings, and other key actors as circular economy agents will be discussed.

Objective of the event towards the following issues:

The event will build on existing efforts and provide an opportunity to exchange on ways to make cities and buildings future proof, reducing the ‘weight of cities’ by using our resources more efficiently through circularity principles, thereby harnessing climate and societal benefits, including health and jobs. The event will discuss how GHG mitigation and adaptation can go hand in hand with more sustainable consumption and production, greater resource efficiency and circular economy approaches, to build more sustainable, prosperous, and equal cities in the coming decades, in line with the vision set out in the New Urban Agenda. Grounded into practice and action, the event will look into the role and needs of key actors of the circular
economy and the pivotal instruments national and local governments as well as industry can use to operationalise the circular economy.

Pre-2020 action:

Smart cities and smart city development have long been discussed as one of the pathways for a sustainable future. Technological advancements hold great promises for more effective and efficient urban solutions. From sustainable grids and district energy solutions for buildings, or real-time traffic management, to waste management and water systems, sustainable technologies will enable our future cities to operate more effectively. Yet, the key to unlocking cities potential extends far beyond that: it is about raising political ambition, a constructive collaboration between different levels and sectors of government, innovative housing, urban and climate policies, sound economic incentives, and better urban planning. It is integrated and coordinated action of stakeholders such as innovators, policymakers, investors, developers, among others that will accelerate impact to help achieve the Paris Agreement goals.

Climate Action Pathway/Yearbook of Global Climate Action/Global Climate Action portal (NAZCA)

A zero-carbon future aligned with the 1.5-degree goal sees fully circular cities and buildings where materials are reused and do not enter/leave lifecycles. Instead of being the biggest consumers for resources, cities and buildings are efficiency hubs, relieving ecosystems and being at the forefront for climate action. This is thanks to effective financial and regulatory incentives including circular procurement and evidence collected and displayed that circular alternatives yield long-term cost savings and multiple co-benefits. This is especially visible in the case of zero-carbon buildings and other infrastructure which have proven to be cost competitive compared to regular approaches.

2019 United Nations Climate Action Summit

The 2019 United Nations Climate Action Summit highlighted the need for climate plans to go beyond mitigation strategies alone. Climate strategies must “show the way toward a full transformation of economies in line with sustainable development goals”. Circular economy is an opportunity to transform the real economy both nationally and locally. Beyond climate action, circular development yields multiple co-benefits, including net job creation and poverty alleviation (SDGs 1, 8, 10), improved sanitation (SDG 6, 11), innovative and sustainable production systems (SDGs 9, 12), protection of local ecosystems (SDGs 14, 15), efficient use of urban assets and increased resilience of the local territory (SDG 11), and ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 7).

This session will offer an opportunity for local leaders to present how they will take their commitment forward by demonstrating concrete decarbonization action and by bringing resources considerations into their climate strategy. Essential to scaling the transition is involving industries in the conversation. Cities and buildings can act as testbeds for new ways of production and the session will look into how buildings and construction stakeholders and participating cities have pushed for innovation and circular ways to manage key resources such as energy, steel, cement and chemicals, and essential raw materials.

This event will also refer to several UN SG Summit commitments, including the ICLA zero carbon buildings by 2050, nature-based solutions, the 3% club for energy efficiency, the cool coalition to address rising cooling demand, and the commitment for financial organizations to divest from fossil fuels.

Types of speakers:

The event will bring together key actors applying circular economy, including national and local country and city representatives, buildings and construction companies, architects, material providers and civil society organizations.
## Programme

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<th>Time</th>
<th>Activity</th>
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<tr>
<td>5 min</td>
<td><strong>Introduction by Master of Ceremonies</strong></td>
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<td><strong>Ms. Martina Otto</strong>, Head of Cities Unit, UNEP / Secretariat of the Global Alliance for Buildings and Construction (GlobalABC)</td>
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<td>5 min</td>
<td><strong>Opening remarks</strong></td>
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<td>Mr. Gonzalo Muñoz, Chile High-Level Climate Champion</td>
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<td>5 min</td>
<td><strong>Keynote</strong></td>
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<td>Mr. William McDonough, Founding Partner, William McDonough + Partners, Architect; Inaugural Chair, World Economic Forum’s Meta-Council on Circular Economy; Co-author, Cradle to Cradle: Design for the Circular Economy</td>
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<td>20 min</td>
<td><strong>What is needed: Setting the scene for circular economy in cities and buildings</strong></td>
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<td><strong>Moderator:</strong> Mr. Sello Mphaga, Divisional Head: City Sustainability, City of Tshwane, South Africa; Chair of ICLEI Global Lead City Network on Sustainable Procurement</td>
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<td><strong>Speakers:</strong></td>
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<td>• Ms. Vera Rodenhoff, Head of Division of International Affairs for Environment and Energy and Environment, Building and Urban Development, OECD and Cooperation with OECD Countries in the German Federal Ministry for the Environment, Nature Conservation Building and Nuclear Safety</td>
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<td>• Mr. Daniel Martínez-Valle, Chief Executive Officer, Orbia</td>
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<td>• Ms. Minna Arve, Mayor of Turku, Finland</td>
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<td>• Mr. Jason Nardi, Head of Global Network, RIPESS</td>
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<td>20 min</td>
<td><strong>What is happening already: Implementing circular economy, day-by-day</strong></td>
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<td><strong>Moderator:</strong> Mr. Brendan Edgerton, Director for Circular Economy, WBCSD</td>
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<td><strong>Speakers:</strong></td>
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<td>• Mr. Mahendra Singhi, Managing Director and Chief Executive Officer, Dalmia Cement (Bharat) Limited</td>
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<td>• Mr. Anthony Abbots, Director Group Sustainability, ROCKWOOL</td>
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<td>• Mr. Ar. Tan Szue Hann, Chairman, Sustainability, Singapore Institute of Architects and Managing Director, MINIWIZ Singapore</td>
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<td>• Ms. Almudena Barona, Associate, Water and Infrastructure, Arup Madrid</td>
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<td>15 min</td>
<td><strong>Discussion with audience based on mentimeter</strong></td>
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5 min  Summary by Master of Ceremonies

5 min  Closing remarks:
Ms. Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform, Scottish Government
Biographies

(in order of appearance in program)

Moderators & Master of Ceremony

**Martina Otto**, Head, Cities Unit, UN Environment

Martina has over 20 years of experience in Environmental Policy and Programme Management, with a particular focus on energy and transport. In her 16 years with UN Environment, she has served in different functions out of Paris and Nairobi, now heading UN Environment’s work on Cities. Before joining UN Environment, Martina worked on Trade and Environment and Economic Instruments in the Area of Environmental Protection with the United Nations Conference on Trade and Development, the European Commission and the Foundation for International Environmental Law and Development. A fully qualified lawyer, specialised in environmental law (LLM from London University in International Environmental Law; Bar exam Frankfurt/Main, Germany) she also worked with a major US law firm on environmental due diligence in the context of mergers and acquisitions.

**Mr. Sello Mphaga**, Divisional Head: City Sustainability, City of Tshwane, South Africa; Chair of ICLEI Global Lead City Network on Sustainable Procurement

Sello Mphaga has 24 years’ experience in local government administration, policy development and project management. He is highly conversant in drawing synergies through vertical integration with organs of state and the horizontal cooperation with peer actors within the climate change action domain. As the Head of City Sustainability in the City of Tshwane, he is responsible for reducing greenhouse gas emissions through influencing provision of low-carbon delivery of services, building the City’s resilience and adaptive capacity against climate change, exploring innovative and alternative sustainable solutions that stimulate the green economy, building climate response capacity through outreach, awareness and education as well as profiling and reporting the City’s Sustainability initiatives on numerous national and international platforms.

**Mr. Brendan Edgerton, Director for Circular Economy, WBCSD**

Brendan is the Director of Circular Economy at the World Business Council for Sustainable Development, a global, CEO-led organization of over 200 companies working together to accelerate the transition to a sustainable world. Since joining WBCSD in Geneva in 2015, Brendan has contributed to over 10 publications on the circular economy. Brendan most recently co-developed and launched Factor10, WBCSD’s circular economy program. Factor10 now has almost 40 members, spanning across 15 industries, 17 countries and responsible for over USD $2 trillion in annual turnover. Brendan also contributed to the establishment of the Alliance to End Plastic Waste. Brendan has an MBA from the Yale School of Management, a Master of Environmental Management from the Yale School of Forestry & Environmental Studies and a bachelor’s in Ecological Design from the University of California Santa Cruz.
Speakers

Mr. Gonzalo Muñoz, Chile High-Level Climate Champion

Mr. Gonzalo Muñoz is a business entrepreneur and social change-maker at the forefront of environmental innovation in Chile, who reinvented the country’s recycling industry to usher in a future without waste. He did so by founding a recycling company in 2009 and, ever since, has been presiding over the expansion of the company to other parts of Latin America. His company produces a recycling station capable of recycling 90 percent of household solid waste. Through the popularity of his innovation, Muñoz has been leading a cultural movement to advance environmental sustainability and social inclusion. In recognition of his leadership, Gonzalo Muñoz was awarded the Circulars 2019 international prize at World Economic Forum’s Annual Meeting in Davos and was also invited to join the New Plastics Economy advisory panel at the Ellen MacArthur Foundation.

Mr. William McDonough, Founding Partner, William McDonough + Partners, Architect; Inaugural Chair, World Economic Forum’s Meta-Council on Circular Economy; Co-author, Cradle to Cradle: Design for the Circular Economy

William McDonough is a world-renowned architect and designer. Throughout his career, he has been considered a global thought leader in the articulation of design for sustainable design and development. He is recognized as a pioneer of the concepts for Cradle to Cradle Design™ and the Circular Economy notably co-authoring Cradle to Cradle: Remaking the Way We Make Things (2002), widely recognized as a seminal text of the circular economy design movement, and its follow up, The Upcycle: Beyond Sustainability—Designing for Abundance (2013). He advises world leaders through McDonough Innovation and leads William McDonough + Partners, an award-winning architecture and community design practice. He also co-founded MBDC, developers and assessors of products for Cradle to Cradle Certification™. McDonough has designed notable landmark buildings in the sustainability movement including Ford’s River Rouge plant in Dearborn, Michigan; Herman Miller’s GreenHouse factory in Holland, Michigan; Nike’s European headquarters in Hilversum, The Netherlands; and the Gap’s corporate campus at 901 Cherry in San Bruno, California — now YouTube’s headquarters. McDonough is active with the World Economic Forum, served as the inaugural chair of their Meta-Council on the Circular Economy and now on their Global Future Council on Biodiversity and the Bio-economy. From 1999-2009 he was the U.S. Chairman for the China-U.S. Center for Sustainable Development. He has been teaching at Stanford University since 2004 and was the A.D. White Professor-at-Large at Cornell University (1999-2004) and Dean of the School of Architecture and the Edward E. Elson Endowed Chair at the University of Virginia (1994-1999). McDonough received the Presidential Award for Sustainable Development, the first U.S. EPA Presidential Green Chemistry Challenge Award, the National Design Award and the Fortune Award for Circular Economy Leadership. Fortune Magazine named him one of the World’s 50 Greatest Leaders in 2019 and Time magazine recognized him as a “Hero for the Planet,” noting: “His utopianism is grounded in a unified philosophy that—in demonstrable and practical ways—is changing the design of the world.”

Dr. Vera Rodenhoff, LL.M. is Head of Division for International Cooperation on Environment, Energy and OECD and OECD Countries in the German Federal Ministry for the Environment, Nature Conservation Building and Nuclear Safety. Prior to this she held positions in the Ministry as the Head of Division of International Affairs and Protocol in the Minister’s staff, as the Head of Cabinet to the Federal Minister of Environment and as Personal Secretary to the Federal Minister of Environment and as Advisor on International Legal Affairs.
Before entering the Ministry Dr. Vera Rodenhoff worked inter alia as an international lawyer in the private sector and as a researcher at the Humboldt University Berlin, specialising in International and European Environmental Law and as a consultant for UNESCO in Paris.

**Mr. Daniel Martínez-Valle**, Chief Executive Officer, Orbia

Daniel joined Orbia in 2018, after serving as CEO of Kaluz, Orbia’s holding company. Prior to his role as CEO of Kaluz, Daniel served as Director of Worldwide Strategy & Planning at Cisco. In addition, he previously worked as managing partner at Nebli Capital Advisors, a private equity and investment advisory firm based in Spain. Daniel was also founder and CEO of Aquanima, a global leader in the sourcing and procurement, bringing value to businesses in Europe and Latin America. Before this, Daniel was a founding partner of BBF Ventures, a €150 million early-stage fund. He has also worked as a consultant at McKinsey & Co. and has served as Chief of Staff at the Ministry of Finance in Mexico.

Daniel has an MBA from the Stanford University Graduate School of Business, holds a bachelor’s degree in Economics from Instituto Tecnológico Autónomo de México (ITAM), and has a diploma in economics from the London School of Economics.

**Ms. Minna Arve**, Mayor of Turku, Finland

**Mr. Jason Nardi**, Head of Global network, RIPESS

**Mr. Mahendra Singhi**, Managing Director and Chief Executive Officer, Dalmia Cement (Bharat) Limited

Mr. Mahendra Singhi has been associated to the growth and development of the cement sector in India for the last 41 years. He leads Dalmia Cement (Bharat) Limited in the capacity of Managing Director and CEO. Dalmia Cement is well recognised globally for its lowest carbon footprint cement, water positive operations and bold ambitions of carbon negative by 2040. In addition, Mr. Singhi also serves following organisations and commissions in India and abroad as a -

- President - Cement Manufacturers Association (CMA), India
- Chairman - National Council for Cement and Building Materials (NCCBM) India
- Chairman - Development Council for Cement Industry, Ministry of Commerce & Industry, India
- Co-Chair, TERI Council for Business Sustainability (TERI-CBS), India
- Member, Climate Change Council in Confederation of Indian Industry (CII), India
- Commissioner, Energy Transitions Commission (ETC), London, U.K.
- Commissioner, High-Level Commission on Carbon Pricing and Competitiveness, World Bank Group, U.S
- Director, Global Cement and Concrete Association (GCCA), London. U.K.

A visionary and advocate of sustainability, Mr. Singhi has been the driving-force in inculcating this concept in the objectives and operations of the cement companies he has worked with. Today, leading Indian cement companies are setting global benchmarks in climate protection and energy efficiency. This is the result of long efforts of business leaders like Mr. Singhi and, the results are overwhelming. For example, Dalmia Bharat has been ranked #1 cement company across global cement sector by award winning research series of CDP (Carbon Disclosure Project) on business readiness for a low carbon transition. Mr. Singhi has also represented business and cement sector globally in the most recognised multi-country platforms such as:
• Climate Action Summit of UN General Assembly on 23rd Sept. 2019 on invitation of UN Secretary-General
• Paris Climate Agreement Ceremony on invitation from Ex. UN Secretary General, Mr. Ban ki-Moon,
• Global Climate Action in COP-24 on invitation of UNFCCC Executive Secretary, Ms. Patricia Espinosa,
• High-Level Govt.-Business dialogues invited by COP-21 and French Presidency.

A positive thinker and strong supporter of happiness culture in the organisation, Mr. Singhi also promotes innovative ideas. He deeply believes that sustainable business is all about creating future opportunities for businesses while mitigating the global challenges such as climate change. Mr. Singhi is a spiritual person and an avid reader of behavioural psychology. Mr. Singhi is a science & law graduate and a Chartered Accountant.

Mr. Anthony Abbots, Director Group Sustainability, ROCKWOOL

Anthony Abbotts has been leading and driving the global sustainability agenda in the ROCKWOOL Group since 2016. He has broad global experience within sustainability in business and the public sector working within this area for over 25 years. He has held various positions in Manchester City Council, Environmental NGOs, Coloplast and the Danish consultant house COWI. As a consultant Anthony supported over a number of years the environmental regulatory authorities in Latvia, Lithuania and Romania in their environmental approximation as part of adopting the entire acquis communautaire into its national legal order. Anthony was also House consultant for Intel’s European operations for a period of six years.

Anthony holds a BA(Hons) in Urban Planning from University of West of England and a MSc in Environmental Planning from Roskilde University. He is an External Lecturer at Copenhagen Business School and External examiner at Roskilde University.

Mr. Ar. Tan Szue Hann, Chairman, Sustainability, Singapore Institute of Architects and Managing Director, MINIWIZ Singapore

Ar. Tan Szue Hann, M. Arch, is Managing Director of MINIWIZ Singapore, and Chairman of Sustainability, Singapore Institute of Architects. He is an award-winning architect and thought leader, and is working on turning waste into upcycled quality products for architecture, interiors and consumer goods.

Hann graduated with M Arch from the National University of Singapore (NUS), with a visiting fellowship to the University of California Los Angeles (UCLA) in 2007, and a BA Arch (First Class Honours) in 2006. On graduation, he was awarded the Lee Kuan Yew Medal, Board of Architects Prize, and the ICI Gold Medal. He is a Registered Architect in Singapore, and also a Board Member of the Singapore Green Building Council (SGBC). Hann is also an appointed World Cities Summit Young Leader (from 2016), and BCA Built Environment Young Leader (from 2016), both by the Ministry of National Development, Singapore. He has also taught at the NUS and SUTD architecture schools. Hann was also Singapore’s 2015-16 Young Green Architect of the Year, awarded by BCA-SGBC, and a Minister’s Award recipient (2017), Singapore. He was elected Chairman of the ARCASIA (Architects Regional Council Asia) Committee for Young Architects (2017-18) and in 2017, he was inducted into Generation T, a group of society and community influencers below the age of 40, and one of Cartier’s 5 Bright Sparks, by Asia Tatler. In 2019, he was inducted into the Prestige 40 Under 40 List, by Prestige Singapore, as one of the leading Changemakers in the nation. He has just been awarded the inaugural BCA Young Leader Advocate Award 2019, for his work in the built environment industry. Hann’s architecture and sustainability portfolio includes the award-winning ParkRoyal on Pickering, the SPACE Asia Hub and the Ogilvy & Mather office with WOHA; the BCA SkyLab, a state-of-the-art rotatable test bed for building technologies, which won a Minister’s Award on Singapore’s
National Day, 2017; an IT campus in Bangalore, and a smart city master plan in Bangkok. He has also led multiple sustainability projects, both in Singapore and internationally, often pushing the envelope of sustainability and innovation. He has spoken in numerous international conferences, including the World Cities Summit 2019 in Medellin, Colombia, and the UN-organised 2019 Asia Pacific Urban Forum 7 in Penang.

Ms. Almudena Barona, Associate, Water and Infrastructure, Arup Madrid

Almudena Barona is an Associate Water and Infrastructure Leader in Arup Madrid. Her background is MEng. Civil Engineer, Project Manager with 16 years of experience leading and managing Water and Hydraulic engineering projects. She has provided civil, hydraulic and river engineering services for many civil engineering projects. Also, she is expert in leading and coaching multidisciplinary international teams in order to design the whole project. Ms. Barona has managed design projects covering all phases of engineering from development of design criteria to final design and construction phases for complex engineering projects.

Ms. Barona has managed water and city development projects in Spain, Europe, Panama, Peru and Colombia, where she lived for four years managing several complex river projects, so her international experience enables her to attain a high level of general and technical expertise in civil engineering projects.

Ms. Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform, Scottish Government

Roseanna Cunningham was born in Glasgow in 1951 but spent most of her early years in Edinburgh and East Lothian. In 1960, she travelled to Australia with her family and subsequently completed her schooling in Fremantle, Western Australia and obtained her first university degree from University of Western Australia. She became interested in politics while still a teenager and in fact first joined the SNP in 1969 as an overseas member. Ms Cunningham returned to Scotland in 1976 and, within only a few months of her arrival, was working full time at SNP HQ, while also being involved in branch and constituency politics in Edinburgh. In 1980, she returned to university in Edinburgh and obtained a Law Degree followed by a Diploma in Legal Practice from Aberdeen University. From her graduation in 1983 to 1988, she worked as a solicitor in local government. After a brief period in private practice, she became a member of the Faculty of Advocates.

She was elected to the House of Commons in the Perth and Kinross by-election in 1995, was re-elected in 1997 and subsequently stood successfully for the Scottish Parliament in 1999. She stood down from Westminster in 2001. Ms Cunningham held a number of local and national offices in the SNP, including Deputy Leader from 2000-2004. She has remained a member of the Scottish Parliament from 1999 to present and has been a Committee Convener for the Justice Committee, the Health Committee and the Rural Affairs and Environment Committee. She became Minister for the Environment in 2009 and Cabinet Secretary for Fair Work, Skills and Training in November 2014.