



**Building Zero
Carbon Britain
Conference**

Building Zero Carbon Britain Conference

Conference Report

Monday, 11th November 2019
Kensington Town Hall, London

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Caterina Brandmayr

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Foreword



Keith Griffiths,
Managing Director,
Built Environment
Networking

“Climate Emergency” is a term becoming more prevalent across the media and fast materialising as a topic for discussion across UK households; with this in mind my team decided to organise an event focused on bringing some of the built environment’s most eminent companies together for a full and frank discussion about how our sector can support the UK net zero ambition. We have organised over 80 events in 2019 but one aspect of this event that stood out was the electric atmosphere during each session and amongst eager networkers, all of whom shared a passion for the green agenda in bucket loads.

With an excellent mix of policy makers, thought leaders and developers on stage, our audience left the venue feeling energised and determined to make a difference.

Speed of change in habits was one of the central themes on the day; several of our speakers urged the audience and the wider members of the supply chain to stop talking and start addressing the problem. Our conference had sessions that covered building sustainable communities, green energy initiatives,

developing sustainable buildings and achieving net zero.

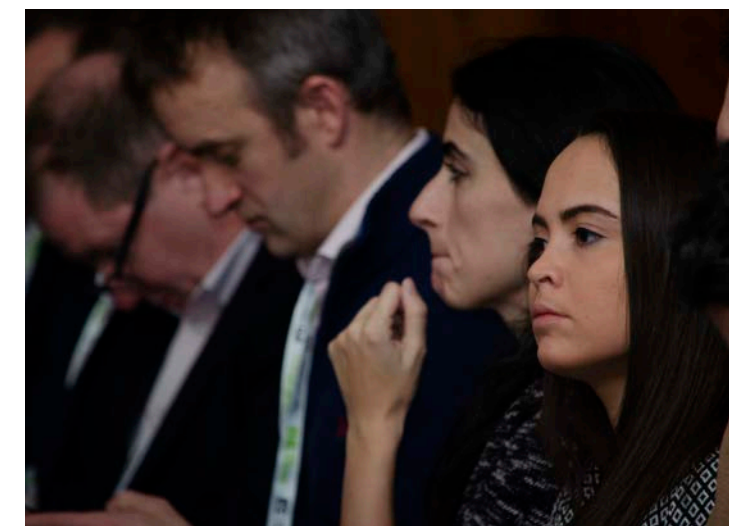
It’s hard to pick out my personal highlight because all of the speakers were fantastic however, we knew the day was going to be special following a rousing keynote speech from the Green Alliance’s Caterina Brandmayr.

I want to take the opportunity to thank AECOM, Waterman and RSM for partnering with us to deliver this event- three companies that are noteworthy for their environmental credentials and standard bearers for others.

Going forward, Built Environment Networking will be at the forefront of bringing together our industry to tackle green issues- we are aware that this discussion shouldn’t be constricted to one event per year however, we are actively consulting on how to grow this event in 2020 and if you have an idea or wish to contribute to the agenda me and the team would be very interested in speaking to you, so please get in touch!

**See you next year,
Keith**

keith.griffiths@built-environment-networking.com



From the Keynote



Caterina Brandmayr

Senior Policy Advisor,
Green Alliance

[@GreenAllianceUK](#)

UK AT RISK OF MISSING 2050 NET ZERO TARGETS

A call to action on climate change has been issued by a Senior Policy Advisor at independent think tank Green Alliance who declared that “the UK is not on track to meet its 4th and 5th carbon budgets to 2032, and the gap is even bigger if we consider the need to get to net zero by 2050.”

Caterina Brandmayr said that, although the UK is the first major economy to have passed a law to mandate a zero-carbon target, it has yet to pass the laws required to implement the target. She laid out five ways in which the UK could move closer to its commitments.

Bringing forward the ban on new petrol and diesel from 2040 to 2030, was the first policy suggested by Brandmayr. She cited the precedent of the Netherlands and Norway who have both set the more ambitious target of 2025 and argued that it “will not only reduce carbon emissions but will help the UK automotive industry by creating a domestic market for electric cars.”

This will require a major infrastructure overhaul to enable electric cars, and Brandmayr raised the need for make sure electric vehicles are “integrated into the grid.”

The second policy proposal raised by Brandmayr was to improve the UK’s resource efficiency, particularly singling out the built environment for improvement: “Construction is one of the biggest sectors where there’s opportunities to use better design,

low carbon materials and re-use to cut emissions.”

Brandmayr proposed a programme of Government support for mass home efficiency improvements. She advised learning from the success of the Energiesprong design principles in Netherlands. Brandmayr connected this to adoption of Modern Method of Construction:

IT RELIES ON NEW TECHNOLOGY LIKE OFF-SIDE BUILDING AND MASS CUSTOMISATION.

Land use is another area raised by Brandmayr, summarising that “we really need to plant many more trees and to expand green spaces across the built environment.”

The final proposal suggested by Brandmayr was perhaps the simplest. The UK needs to invest more in renewable energy. The recent price improvements to renewable generation were portrayed by Brandmayr as enabling factors:

WE NEED TO MAKE A MUCH BETTER USE OF ENERGY GENERATION. SOLAR POWER AND OFF-SHORE WIND ARE NOW THE CHEAPEST FORMS OF ENERGY GENERATION.

The UK faces a historic turning point with the climate crisis, and whether or not the nation rises to overcome it will depend on the adoption of carbon-saving policies such as these.



Achieving Net Zero Q&A

Panel Members:



**Chair:
Miles Attenborough**

Director of Sustainable Development, AECOM
@AECOM



Caterina Brandmayr

Senior Policy Advisor,
Green Alliance
@GreenAllianceUK



Jonathan Bartley

Co-Leader, Green Party
@TheGreenParty

TACKLING CLIMATE EMERGENCY MEANS GOING BEYOND THE 'POLITICALLY POSSIBLE'

Leader of the Green Party Jonathan Bartley has said tackling the climate emergency means going with what “the science demands and not what is seen as politically possible.”

Bartley noted that in 2017 the climate emergency was scarcely discussed, yet now “50-60% of people will take climate into account at the next election.”

He also criticised Government targets as still posing a substantial climate risk:

2050 IS A TARGET WHICH WILL LEAVE US WITH A 50% CHANCE OF RUNAWAY CLIMATE CHANGE BY THEIR OWN ADMISSION.



Local Government inaction was also raised by Bartley as an obstacle, but he saw central Government to blame for this: “The framework has to come from central Government, the green revolution has to come from the bottom-up.”

Anna Bright, Chief Executive of Sustainability West Midlands suggested that the crisis should be tackled on a regional level. She described the “huge variety in ambition” between councils for the date for zero carbon which ranges between 2028 and 2041 in the West Midlands.

Bright cited councils that were successful in formulating a response have tended to be “where they’ve got some really effective and long-term business networks, and the local authorities themselves have supported green business networks.”

Dr Jannik Gieseckam, Research Fellow in Industrial Climate Policy at the University of Leeds supported the change of land use highlighted in a recent report by The Committee of Climate Change (The CCC), claiming it as necessary to tackle climate change: “The CCC say we need to do 70% more tree planting than we’re currently targeting, and we’ve missed our tree planting targets for the last ten years.”

Gieseckam linked this to a change in building materials, advocating for Government support of cross-laminated timber, which is a carbon-negative material. Concrete is a particular contributor to the climate crisis within construction and replacing its use could severely reduce the carbon emissions of the industry.

He suggested this be enforced through regulatory action, following international examples: “Put embodied carbon into building regulations, the Dutch have done this since 2012 and they introduced the cap last year.”



Sarah Turner

Assistant Director,
Building with Nature
BuildWithNature



Dr Jannik Gieseckam

Research Fellow in
Industrial Climate
Policy, University of
Leeds
@UniversityLeeds



Anna Bright

Chief Executive,
Sustainability West
Midlands
@SWMtweet



Paul Guest

Senior Energy
Modelling Analyst,
Energy Systems
Catapult
@EnergySysCat



Gieseckam was critical of some aspects of the CCC report, particularly the lack of behavioural change accounted for. This technology gap was also raised by Paul Guest of Energy Systems Catapult who said of the report:

IT'S IMPORTANT TO TAKE FROM THE CCC THAT NET ZERO ISN'T ACHIEVABLE WITHOUT DRAWING ON THINGS WE CONSIDER SPECULATIVE.

Guest noted that there was a lack of incentives to encourage consumers and industry to switch to more energy efficient forms of heating, he said: “There is insufficient mechanism to drive people towards systems that are preferable from a carbon point of view, everyone understands the incumbent technology very well.”

Caterina Brandmayr of Green Alliance stressed that public support and awareness of the issue was at an all-time high:

THE OPPORTUNITY IS NOW TO USE THE PUBLIC MANDATE AND REALLY INTEGRATE THAT IN THE POLITICAL SPHERE.

These sentiments were echoed by Sarah Turner of Building With Nature, a bench marker of green infrastructure: “I think the level of commitment and the level of interest is exponential at the moment.”

Turner suggested that the planning stage be subject to new regulations to ensure developers were meeting targets:

WITHIN PLANNING THERE SHOULD BE SOME SORT OF LEGISLATION THAT STATES BIODIVERSITY NET GAIN, ZERO CARBON POLICIES SHOULD BE STIPULATED FOR ANY NEW BUILD DEVELOPMENT AND REDEVELOPMENT OF ANY SITES.

The climate emergency is one of the biggest challenges faced by the industry, and more broadly, humanity. If it is to be resolved as soon as possible, it needs investment, it needs innovation, it needs a step change in practice and most importantly it needs cooperation across industry, Government and society to go beyond our present assumptions of political realities.



Buildings

Panel Members:



Chair: Chloé Souque

Associate Director - Sustainability, Waterman Infrastructure & Environment
@Waterman_group



Cllr Bridget Smith

Leader, South Cambridgeshire District Council
@SouthCambs



Kristina Arsenievich

Senior Sustainability Manager, Canary Wharf Group
@yourcanarywharf

BUILDING THE SUSTAINABLE COMMUNITIES OF TOMORROW

Juliette Morgan, Head of Campus at British Land has highlighted the huge potential carbon savings within the construction industry.

She said: "There are 30 gigatons of potential CO2 reduction in our sector until 2030."

British Land are behind plans to create a new £4bn town in London's Canada Water, a product of "5 years of community investment," according to Morgan.

British Land has been working on their carbon efficiency developing BREEAM rated buildings and refurbished their estate such as their One Triton Square asset which has recently seen a £144m retrofit, making 40% carbon savings.

The lack of innovation within construction was raised by Morgan who pointed out that R&D spending was only 1% of revenue within the industry and quipped:

IF YOU WERE ANCIENT EGYPTIAN AND TURNED UP ON A BUILDING SITE TODAY, IT WOULD LOOK BROADLY LIKE IT DID IN THE EGYPTIAN TIMES.

Concrete has a particularly negative environmental impact, which Morgan pointed out that "if concrete was a country it would be the third biggest country on emissions behind China and India."

British Land have been exploring timber, and more recently Bamboo as alternative materials as well as modelling their scope 3 emissions.

Canary Wharf Group are a major developer within the Capital and Senior Sustainability Manager at the firm Kristina Arsenievich described how the firm was tackling the climate

crisis in the construction of the "increasing stock of private and affordable housing" in the area.

Arsenievich criticised the notion that sustainability was a new issue:

IN TERMS OF RECOGNISING THE SCALE OF CHALLENGE, THIS ISN'T THE FIRST TIME WE'VE FACED SUSTAINABILITY.

Canary Wharf Group was itself among "the first to use BREEAM", a standard for high sustainability in buildings.

Sustainability within placemaking was also raised by Arsenievich, who said the firm were "compliant with code level 4, looking to embed sustainability and social integration as well as wellbeing in all of our public realm."

Within client energy use Arsenievich told delegates that their method was to proceed "through cooperation, working really close with tenants and our supply chain."



Chris Thompson

Managing Director, Citu
@CituUK



Juliette Morgan

Head of Campus, British Land
@BritishLandPLC



Chantal Henderson

Director of Commercial Finance, Grosvenor Group
@Grosvenor_GBI



Derek Wilson

Senior Sustainable Development Manager, Transport for London
@TfL

WE ARE PAST THE POINT WHERE WE HAVE ANY CHOICE TO ACT, WE HAVE TO DO MORE, WE HAVE TO DO IT FASTER

was the rallying call of the Leader of South Cambridgeshire District Council, Cllr Bridget Smith. Smith declared the pledge of the district to become "a carbon neutral district long before 2050."

South Cambridgeshire is currently the district with the most environmentally friendly administration in the East of England with a leadership that has "put in more money than any other authority to being green to our core", according to Smith.

She said the authority has taken a devolved approach to tackling the issue in the region: "We've been giving quite generous grants to parish councils to do their own bottom-up projects."

Transport for London, far from just being providers of London's travel network are "undertaking one of London's biggest redevelopment programmes" according to Derek Wilson, Senior Sustainable Development Manager with the organisation. Whilst he accepted the necessity of sustainability to proceed in a "commercially viable manner" he criticised the notion that sustainability was incompatible with affordability, he said:

THIS FACETIOUS ARGUMENT THAT I SEE DEVELOPERS MAKING THAT THIS IS GOING TO COST MORE MONEY THEREFORE PEOPLE CAN'T AFFORD A HOUSE, IT'S JUST NOT TRUE.

Within transportation he stressed the prioritization of "green infrastructure, healthy streets and good performance."

Transport for London are also planning on monitoring the performance of their developments, Wilson said:



"First and foremost we've dedicated to do post-occupancy on every building that we develop."

Grosvenor Group, a major family-owned property company which owns large parts of Mayfair and Belgravia, have been "spending £500m retrofitting buildings" according to Chantal Henderson, Director of Commercial Finance for the firm.

The group has recently published their sustainability goals, seeking to contribute to the carbon neutral agenda. Henderson discussed how on their new builds they have "modelled climate resilience into the buildings themselves."

The group is also seeking to tackle the housing crisis and is focusing on "creating social and economic value" according to Henderson. She also criticised the reticence of some firms to act on the climate crisis, questioning "how much data do we need to know it's the right thing to do?"

Citu's Managing Director Chris Thompson described the mission of the firm: "Everything we do is to help tackle the climate crisis that we have."

The firm have recently been developing a 20-acre Climate Innovation District in Leeds.

The wide variety of institutions targeting a carbon neutral future from major land owners and developers, to innovative market disruptors, Government and transport bodies can only show the potential that there is to tackle the crisis through all sectors working at once.

Electricity

Panel Members:



Chair: Phil Laycock

Director, Built Environment
Networking

Twitter: @BENetworking



Professor Liana Cipcigan

Co-Director of the Electric
Vehicle Centre of Excellence,
University of Cardiff

Twitter: @cardiffuni



Ian Johnston

Chief Executive, Engenie

Twitter: @engenieUK

DEVELOPING SOLUTIONS IN THE UK'S 'HIGHEST EMITTING SECTOR'

Liana Cipcigan, Co-Director of the Electrical Vehicle Centre of Excellence at Cardiff University, has stated the need to make rapid changes in the transport industry to help tackle climate change.

She said, "transport is the highest emitter of greenhouse gases out of all sectors" and she predicts a rapid change particularly with the roll out of electric vehicles (EV): "We will have 11m electric vehicles on the road from 2030 and 36m by 2040."

Cipcigan credited the 2017 law banning all new petrol and diesel cars as being the catalyst for this projected growth, describing the EV market as being "a slow movement", prior to the adoption of the law. She described the change as:

NOT COMING FROM INDUSTRY OR ACADEMIA BUT FROM POLITICAL WILL.

Eddie Orr, Head of Electrical Capability at Rolls-Royce, described their corporate decisions around fighting the climate crisis as having become a "fundamental part of a strategy, electrification of all of business and everything we do." The firm has set up a division of Rolls-Royce Electrical to lead on the transition.

Aerospace faces significant challenges in reducing emissions particularly, as Orr conceded:

IF YOU WANT TO FLY A LONG DISTANCE BEFORE 2050 YOU WILL BE USING A GAS ENGINE, AN ALL-ELECTRIC JUMBO JET IS A LONG WAY OFF.



Rolls-Royce have therefore focused on doing the most they can to improve green performance: "We're looking at alternative fuels and we're looking at more electric engines."

Personal Air Mobility, essentially electric helicopters, has been an area where Rolls-Royce have targeted for development. Intending to replace internal flights, which Norway has already declared will be carbon neutral by 2040, the technology still faces an uncertain regulatory environment. Despite this, Orr expressed confidence in approval for the technology: "2025 is when the whole certification issue will be solved."

Air pollution was raised by both Cipcigan and Ian Johnston, Chief Executive of Engenie, a provider of EV charging points. Cipcigan revealed the alarming fact that "more than 2000 schools around England and Wales are located in black spots which are illegal locations because they're close to roads with high levels of pollution."



Douglas Stewart

Chief Executive,
Green Energy UK

Twitter: @green_energy_uk



Adam Morton

Head of Environmental
Technology,
Rolls Royce

Twitter: @RollsRoyce



Darren Gardner

Head of E.ON Drive UK, E.ON

Twitter: @eonenergyuk

Johnston also revealed that

MORE PEOPLE IN THE UK DIE BECAUSE OF THE AIR WE BREATHE THAN IN MEXICO, SINGAPORE, OR KUWAIT.

50% of that pollution comes from transport alone, meaning that the shift to zero-emissions in transport is of primary importance, but in the wider context of this EV adoption is low, according to Johnston.



Johnston expressed positivity in the market changes for EVs, saying that "mass market affordable EVs are arriving now."

Johnston described the industry as preparing for mass adoption, he said: "We don't know when we truly will reach mass adoption, but the land grab and the grid grab is happening today."

Douglas Stewart, Chief Executive Officer at Green Energy UK, a small energy firm echoed Johnston's sentiments, saying "2020 will be a key year for EVs, and we will see models by major manufacturers."

Stewart described difficulties with the grid being able to provide support for EVs: "EVs do not fit neatly into the conventional rules and regulations on electricity supply."

However, he saw the real issue as a lack of information for the grid, Stewart said:

THE REAL ISSUE IS DATA, YOU CAN MANAGE THE GRID MUCH BETTER IF YOU MANAGE IT WELL.

He did concede that in areas the grid would need strengthening, however.

This was supported by Darren Gardener, Head of Business Development at E.ON Drive who suggested misinformation was as a cause: "The problem is actually that individual businesses have booked demand with the DNO, and that's sort of the worst case scenario, so the system thinks it has run out but it actually hasn't."

Overall whilst transport is currently the highest emitting sector, it is also one which features some of the greatest possibilities for reforming away from that. Aerospace presents a specific challenge within the sector, but can benefit from efficiency improvements, transport is on the tip of an iceberg in terms of the massive changes it can make.



Alternative Energy Sources

Panel Members:



Chair: Phil Laycock

Director, Built Environment
Networking
@BENetworking



Julia Safiullina

Investment Manager,
Iona Capital
@Iona_Capital



Paul Brown

Director of Capital
Projects, Viridor
@ViridorUK

UNTAPPED POTENTIAL FOR THE UK IN ALTERNATIVE ENERGY SOURCES

Julia Safiullina, Investment Manager for Iona Capital, has revealed the massive potential for biomass energy in the UK: “There were around 25 anaerobic digestion plants in the UK when we started in 2011, whereas Germany had around 8000. There now around 500 in the UK, 17 of those are ours, and this level of development growth will only continue.”

Anaerobic digestion has the potential to deal with the issue of the large amount of biowaste in the UK, and whilst the process itself is not carbon neutral, as Safiullina admitted, it actually reduces carbon whilst generating power, as waste that degrades at landfill itself releases more carbon.

Safiullina predicted a continued increase in adoption of the technology in the UK and referred to the Scottish plans to ban biodegradable waste from landfill by 2021. Despite this, Safiullina advocated for better waste management to ensure climate goals:

WE NEED TO LEARN HOW TO RECYCLE BETTER, THIS IS WHERE GOVERNMENT NEEDS TO COME IN WITH INCENTIVES.

Paul Brown, Director of Viridor praised the overall improvement in waste management: “The waste sector has delivered one of the greatest drops in greenhouse gasses, having reduced its output from 70m tonnes of CO2 at its peak in 1995 to just 20m in 2017.”

Viridor have “over 300 recycling systems of various descriptions”, according to Brown.

Peel Environmental are developing the first low-carbon industrial cluster in the UK, the Energy Innovation District near Warrington. Myles Kitcher, Managing Director of the firm said that if the country is to meet its decarbonisation targets then



YOU CAN'T JUST SUPPORT ONE CLUSTER, YOU HAVE TO SUPPORT CLUSTERS ACROSS THE UK.

Peel Environmental have a major carbon capture and storage (CCS) plant which Kitcher described as the “the cheapest CCS project in the UK.”

The firm are also developing the UK's first plastic to hydrogen plant, an £11m JV with firm Waste2Tricity. Kitcher explained how this plays its part in the carbon reduction agenda:

THIS TECHNOLOGY TAKES PLASTIC TO HYDROGEN, IT'S NOT A SOLUTION BECAUSE IT'S NOT CARBON NEUTRAL BUT IT DOES HAVE ENVIRONMENTAL BENEFITS.



Myles Kitcher

Managing Director,
Peel Environmental
@PeelLandP



Hugh Brennan

Managing Director,
Hive Energy
@hiveenergy



Nick Gosling

Group Strategy Director,
Vital Energi
@VitalEnergi

Furthermore, hydrogen provides the possibility of “decarbonising heat” due to it being able to avoid the emissions of natural gas usage.

Vital Energi also share the ambition to decarbonise heat, and they're looking to work directly with clients to develop solutions. Group Strategy Director, Nick Gosling described how the firm takes a dual approach: “We do own and operate our own ESCOs, but we do help clients with their own ESCO opportunities.”



One way the firm has succeeded in doing this is through the production of what Gosling described as “underground heat distribution networks that takes heat to customers.”

The business has recently been awarded a contract by Leeds City Council to produce a district heating network for their emerging South Bank regeneration.

Another area where Vital Energi see as a relatively untapped source of alternative energy is that of waste heat. At the £250m Queen's Quay regeneration in Glasgow the firm have been using the River Clyde as a source of heat energy.

There are still difficulties with making the technology widespread, as Gosling explained:

THE BIG CHALLENGE WE FACE IS THE ECONOMIC OPPORTUNITY OF DISTRICT HEAT NETWORKS VS FOSSIL FUELS WHICH ARE STILL VERY CHEAP.

Ultimately, government funding of the infrastructure will be vital in mainstreaming its usage.

Hive Energy are a major producer of solar energy, but it is one area in the renewable sector that has faced a set-back, as managing director, Hugh Brennan explained: “We've been in the subsidy free world for the past 3 years.”

The firm is developing its first solar plant following the removal of subsidies, which has created new challenges as Brennan put it “banks don't like uncertainty.”

New and exciting forms of energy are emerging across the country, and while it is tempting to view one as a likely solution to the nation's climate woes what is most likely, is that as Gosling described as “a blend of all these technologies.”



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INTERNATIONAL FIRE
CONSULTANTS GROUP

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Save the date



17th November 2020

London
08:00 – 17:00

GET INVOLVED:

Interested in having your brand at the forefront of the biggest national discussion on creating the UK's zero carbon future?

Get involved early and secure your spot as a partner to position your brand as a thought leader and support to hundreds of the nation's top players

For further information on partnership opportunities available contact:
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