



NGO SUSTAINABILITY

GLOBAL WARNING

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This edition is dedicated to the Webinar held by
NGO Sustainability and Roth Capital on October 27th, 2021.

PROMOTING SUSTAINABLE LIVING AND RENEWABLE ENERGY FOR THE FUTURE OF OUR PLANET
ngosustainability@gmail.com | unngosustainability.org

"If working apart, we are a force powerful enough to destabilize our planet. Surely working together, we are powerful enough to save it." - David Attenborough

ALOK SHARMA

The UNFCCC

Alok Sharma was President of COP26, the United Nations Climate Change Conference, on 8 January 2021. Ahead of COP26, the COP President sets the agenda for the summit and drives ambition internationally.



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Invite you to...

LOOKING TOWARDS GLASGOW
Transitioning from a Fossil Fuel to a Renewable Energy Society

A Climate Tech Webinar ahead of the forthcoming COP26 UN Climate Change Conference

Wednesday, October 27 • 9:30-11:30am EST

TO REGISTER:
[Click here](#) or scan the QR code

FOR QUESTIONS PLEASE CONTACT:
Roma Stibravy, President
ngosustainability@gmail.com

SPECIAL GUESTS:
Abdulla Shahid - President of the United Nations General Assembly and the Foreign Minister of Maldives
Rodrigo Carazo - Ambassador of Costa Rica to the United Nations

SPEAKERS:
Jeff Eckel - Chairman & CEO, Hannon Armstrong (NASDAQ: HASI)
Andy Marsh - President & CEO, Plug Power Inc. (NASDAQ: PLUG)
Michael Dee - CFO, PureCycle Technologies (NASDAQ: PCT)
Robert Margolis, Ph.D. - Senior Analyst, National Renewable Energy Laboratory (NREL)
Travis Bradford - Columbia University
Cathy Zoi - CEO, EVgo (NASDAQ: EVGO)

The Glasgow meeting (COP26), which will discuss the report of the Intergovernmental Panel on Climate Change (IPCC), takes place Oct. 31 - Nov. 12, 2021. COP26 will be working to enhance global cooperation and collaboration to increase the commitments of the 193 signatories to the Paris Climate Change Agreement to further reduce their carbon footprints.

The main goals are to secure global net zero carbon by midcentury and keep 1.5 degree temperature rise within reach, adaptation to protect communities and natural habitats, mobilization of finance to help developing countries, and to work together to meet these goals.

It is foreseen that COP26 will emphasize the necessity of dealing with the climate crisis through collaboration by governments, businesses, and civil society.

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The Right Honorable Sharma served as Secretary of State for Business, Energy and Industrial Strategy between 13 February 2020 and 8 January 2021. He was previously Secretary of State at the Department for International Development from July 2019 to February 2020, Minister of State for Employment at the Department of Work and Pensions from January 2018 until July 2019, and Minister of State for Housing and Planning for the Department for Communities and Local Government from June 2017 to January 2018. Prior to entering Parliament, he qualified as a chartered accountant with Coopers & Lybrand Deloitte, and then worked for 16 years in banking.

Event flyer (to the left)

LOOKING TOWARD GLASGOW - Webinar

*Opening remarks of Roma Stibravy, President,
NGO Sustainability*

The question before us as we anticipate the opening of the Glasgow Conference, COP26, in a few days, is whether the decision makers there will listen to the science, reflect on the many climate related catastrophes the world has experienced since the Paris Agreement in 2015, and agree to action plans to match all our aspirations. What are those aspirations... to slow, then reduce greenhouse gas emissions to avoid the increasing, nearing irreversible climate changes that we have all witnessed in these past years.

The first environment conference was in Stockholm 1972. In 1988, Dr. James Hansen told a group of U.S. Senators that carbon emissions were disrupting people's lives and raising global temperatures. At the Rio Conference in 1992 world leaders agreed to stabilize emissions of carbon dioxide and other greenhouse gases to avoid a deterioration of the global environment.

Many studies and conferences followed, with member states trying to agree on legally enforceable targets while at the same time there was an ongoing rise in carbon in the atmosphere, and warming temperatures.

Paris negotiated a changed approach with the 197 participants making modest voluntary pledges on climate action to be reported on annually, which are called Nationally Determined Contributions (NDCs). Few countries, if any, reached their declared targets, and these targets would not have in any case kept average global temperatures to 1.5 Celsius above pre-industrial levels. The International Panel on Climate Change (IPCC) report stated that this goal can only be reached by sharply increasing the use of renewable energy to

replace fossil fuels, while driving electric vehicles, creating smart buildings and smart streets.

In this regard, the United Nations Environment Program(UNEP) report found that governments are still planning to extract double the amount of fossil fuel by 2030 than would be consistent with the goal of keeping the rise of global temperature rise below 1.5 degrees Celsius.

There is increasingly exciting talk about making nuclear fusion energy commercially viable to replace fossil fuels. So, perhaps by the time of our next webinar or in person event this might be the optimistic subject of discussion.

I should mention that eleven leading oil companies have formed a consortium to work together on carbon capture. We also have the tools available for carbon pricing and carbon tax, which have been implemented on a small scale. in fits and starts. There is also active rethinking of food production and water use. One of the most favorable advances is the spiralling downward cost of solar and wind energy.

Ultimately, our greatest hope is increasing technological advances - some of which we look forward to hearing about today.

OPENING REMARKS BY HONORED SPECIAL GUEST



Abdulla Shahid
*President of the UN General
Assembly and the Foreign
Minister of Maldives*

Abdulla Shahid is the President of this year's UN General Assembly and Maldives' Foreign Minister. He outlined the current state regarding global emissions, and what he believes are the most important objectives moving forward. He focused on three key areas for the negotiations in the upcoming COP26 meeting in Glasgow. First, developed countries must meet their climate financing pledges to ensure that developing countries can reach their emissions targets. Second, new technologies, developed to curb or reduce global emissions, should be shared freely with everyone in order to combat climate change globally. Last, climate financing should be split evenly between mitigation and adaptation, especially as climate change increasingly threatens the Small Island Developing States (SIDS) regardless of future emissions reductions. He concluded his speech on an optimistic note about the potential of the Glasgow negotiations, but cautioned that all nations must work together to address this ever-present global challenge.



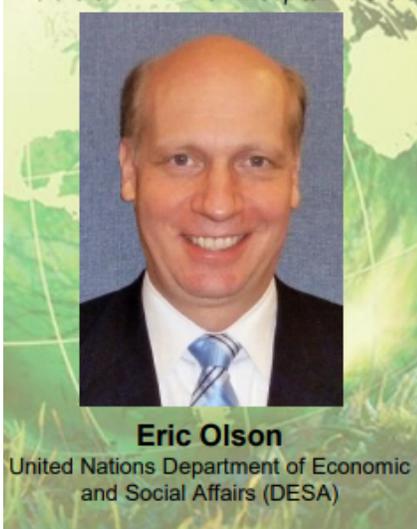
Rodrigo Carazo
Ambassador of Costa Rica

H.E. Rodrigo Carazo, the Ambassador of Costa Rica to the United Nations and Co-sponsor of “Looking Towards Glasgow”. Ambassador Carazo is also a Board Member of NGO Sustainability. He began his remarks by thanking the President of NGO Sustainability and Roth Capital for putting together this webinar. He stated that countries around the world need to separate the consumption of fossil fuels from economic growth and social well being. He hopes that the current models will make a pathway for achieving decarbonization by 2050 in order for the planet to prosper. H.E. Carazo concluded by stating that he hopes the world will remember that the solutions to the climate crisis are within reach, and that he is hopeful for the future.



Huda Ali Shareef
*Permanent Representative
Maldives to UNESCAP*

Ms. Huda Ali Shareef, Deputy Ambassador and Permanent Representative of Maldives to the Economic and Social Commission for Asia and the Pacific (UNESCAP), focused on the effects of climate change on small island states, such as the Maldives. She presented significant statistics, such as the fact that the highest point in the Maldives is only one and a half meters above sea level. Ms. Shareef stated that climate change is already attacking the country’s economy by destroying its coral reefs and damaging infrastructure. The monsoon patterns that the country depends upon are changing, threatening their existence on these islands. Ms. Shareef explained that the Maldives are taking steps to switch its energy consumption from importing diesel to renewables. She stated that larger economies need to make this transition as well, by phasing out coal and eliminating fossil fuel subsidies. She concluded that the world must work together to reach the common goal of reducing greenhouse gas emissions immediately.



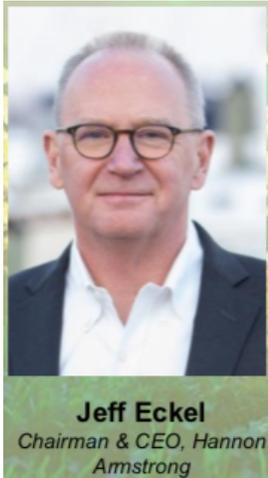
Eric Olson, representing the United Nations Secretariat, is a Senior Economic Affairs Officer at the United Nations Department of Economic and Social Affairs (UNDESA). Mr. Olson focused on the U.N Sustainable Development Goals And the 2030 Agenda for Sustainable Development in his discussion. He said that this webinar is addressing Sustainable Development Goals (SDG) 7, “ensuring access to reliable and sustainable energy for all”, and SDG 17, “partnering for sustainable development”. These goals are a critical component of the Agenda and progress hopefully will be made on them at COP26 this month.

SUSTAINABILITY SENIOR RESEARCH ANALYSTS AT ROTH CAPITAL PARTNERS POSED QUESTIONS FOR THE PANELISTS.



The Sustainability Banking Team is particularly focused on companies with technology that provides a solution to global energy and environmental challenges. The sustainability team helps these companies with access to capital and transactions, investment banking, and research. This sector focuses primarily on Advanced Materials, Clean Fuels and Green Chemistries, eMobility, Smart Cities, Environmental and Ag Tech, Solar, and Wind. Roth Capital is a collaborator and in Corporate Liaison relationship with NGO Sustainability, assisted hosting this webinar. This event features the following clients in working relationships with Roth Capital: Hannon Armstrong, Plug Power, PureCycle Technologies, and EVgo.

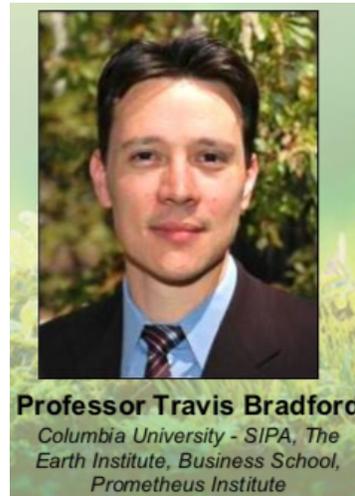
SUMMARIES OF PRESENTATIONS



Jeff Eckel is the chairman and CEO of Hannon Armstrong. Based in Annapolis, Maryland, Hannon Armstrong is the first and only U.S. public company solely dedicated to investing in climate solutions. They provide capital to leading companies in energy efficiency, renewable energy, and other sustainable infrastructure. With more than \$8 billion in managed assets, its core purpose is to make climate positive investments with superior risk-adjusted returns.

Hannon Armstrong invests about \$2 billion annually in three distinct asset classes related to mitigating greenhouse gas emissions, such as supporting sustainable grid-connections through onshore wind and solar energy projects. These categories have led to total annual return of 28%, which is two times the S&P 500.

Their investment thesis is that the company will earn better risk-adjusted returns by investing on the environmentally-friendly side of the climate change line. The company's investments signal their belief that capital can make a difference in accelerating a change to low-carbon investments. Eckel hopes their actions encourage other large banks to publicly disclose the carbon impact of each investment.



Travis Bradford is a professor of Professional Practice at Columbia University, where he teaches at the Columbia Business School, the Earth Institute, and the School of International and Public Affairs. He is also the President of the Prometheus Institute for Sustainable Development, a U.S.-based non-profit.

Bradford discussed how we can reduce carbon emissions while not impairing (or perhaps even bolstering) economic activity. In order to get to an annual mean global temperature of 1.5°C over pre-industrial levels, we must remove about 670 billion tons of carbon dioxide from the atmosphere, or about 10 billion tons of CO₂ per annum until the year 2050. Bradford listed a few different ways that carbon can be removed from the atmosphere. One is through nature-based solutions: using trees to sequester carbon. Another way is using materials that break down carbon dioxide in an accelerated version of natural process.

Bradford also described other methods through which sequestered carbon may be reused, including as input material in fuels. He argued that carbon pricing can strongly incentivize the removal and storage of atmospheric carbon. Bradford concluded by stating that incentivizing companies to become carbon neutral can

encourage growth and investment in new technologies that address climate change.



Andy Marsh, chief executive of Plug Power, positioned the company as the world leader in hydrogen fuel cells. The company developed the first commercial market for fuel cells and built the first hydrogen fueling station for an industry that was previously delivering hydrogen to customers. Currently, Plug Power has built over 165 hydrogen fueling stations globally.

Plug Power is making over a \$250 million investment to build the largest green hydrogen plant in the world in New York, which uses power from Niagara Falls. Green hydrogen is hydrogen that is produced from the electrolysis of water. The company will use its own electrolyzer to create green hydrogen, turning it into liquid form for distribution.

Plug Power has a joint venture with Acciona, the largest provider of renewable green hydrogen in Iberia, Spain. The company aims to deploy 30 tons of green hydrogen in Iberia and to target 20% of the market there over the coming decade.

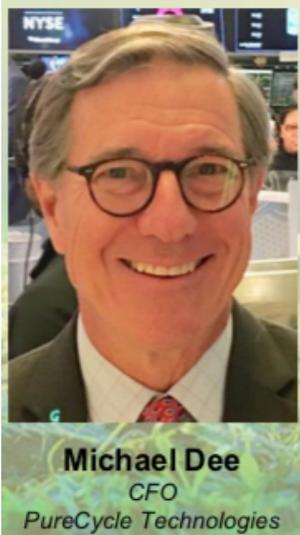
Plug Power has a project in Australia, where they see green hydrogen as an alternative to mining, which creates many environmental problems in terms of cleanup.

Plug Power also formed a joint venture with SK Corp., a South Korean conglomerate, in order to accelerate the use of hydrogen as an alternative energy source in Asia's markets. Plug Power is building large stationary power systems, which will use blue hydrogen to create electricity. This partnership includes a \$1.6 billion strategic investment from SK Group into Plug Power because Plug Power is the only one with the technology and capacity to provide the entire ecosystem.

Plug Power believes that hydrogen is critical for a sustainable future. By 2025, they hope to continue to build partnerships and to expand to more markets.



Plug Power/Market Watch



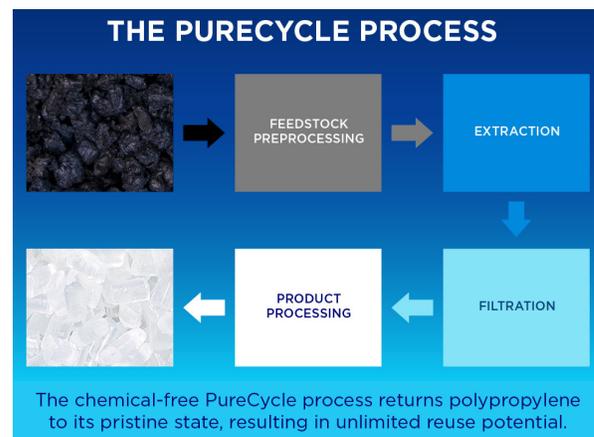
Michael Dee, CFO of PureCycle Technologies, explained how his company has carved out a unique niche in the field of recycling. Recycling has been plagued by inefficiencies and waste; nearly all of polypropylene produced is thrown away rather than recycled. Until recently, oil has been essential for plastic production, but new technology developed by Procter and Gamble (P&G), and licensed by PureCycle, can convert polypropylene found in trash back to its original state to be reused. This process is cheaper and more environmentally friendly than manufacturing new plastic.

P&G spent \$100 million, tasking their researchers to find a solution to the plastic problem: in essence, a way to remove the impurities from polypropylene to make it reusable. When their scientists developed a solvent-based separation method, the company financed a pilot plant in Ironton, Ohio. From there, PureCycle stepped in to expand the program.

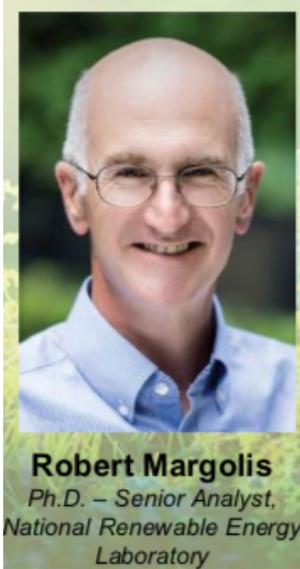
PureCycle is rapidly expanding the business of polypropylene upcycling, with five new plants planned for development in Georgia. The company has also established partnerships around the world that will make global development easier. European officials recently enacted a tax on non-recycled plastic. This may

increase PureCycle's influence by making upcycled polypropylene more economically viable than ordinary plastics.

Various products use polypropylene, so there is no shortage of material to purify. Plastic is a resilient material. When discarded in a landfill it takes thousands of years to degrade. This is why PureCycle sees an urgency in their work, and they hope to bring the recycling rate of polypropylene up to par with other materials such as glass and paper.



PureCycle/PR Newswire

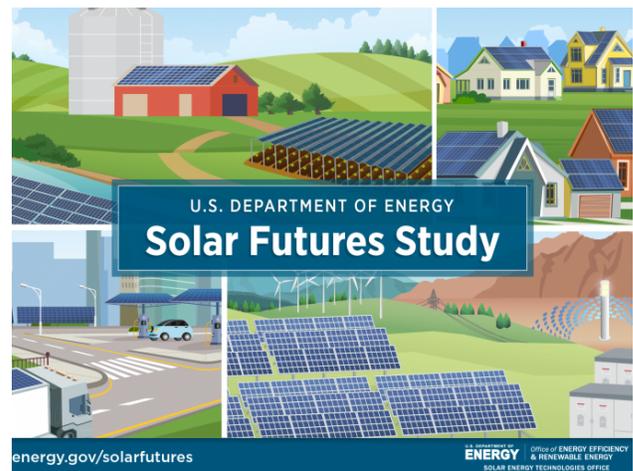


Dr. Robert Margolis is the group manager and senior analyst in the National Renewable Energy Laboratory. He spoke about the Department of Energy’s recently released “Solar Futures Study,” of which he is an author. This study provides a comprehensive review of the potential role of solar in decarbonizing the U.S. electricity grid by 2035. Also, the study encourages thinking about broader transformations of the energy system by 2050.

The study outlines paths for achieving short-term goals, which include increased electrification: using solar and hydrogen energy to accelerate decarbonization. The long-term planning involves policy creation that builds the analytic foundation for the next decade of solar research in the U.S. These policies include advancement of technology, equity, grid integration, and cross-sector interactions.

While the study focused on solar, it also addressed how wind energy storage and other technologies can complement solar energy. A grid utilizing various renewable elements can be made more reliable in terms of transmission and flexibility. The vital emissions reduction goals must be met by advancing technologies and policies to limit carbon emissions and promote clean energy.

In 2020, the fossil fuel electricity grid provided the majority of electricity generation which was used across sectors. No electricity went into transportation. With greatly increased solar capacity by 2035, solar and other renewable industries should have a more prominent role in the electricity system generation. The transportation sector and buildings will have a significant renewable electrification expansion too, as they move away from fossil fuels. This is the area where there is potential for hydrogen or other fuels. Decarbonized solar energy has the potential to serve 40 percent U.S. electricity needs, embed decarbonization in the grid, and significantly boost jobs in the energy sector.



Department of Energy



Cathy Zoi is the CEO at EVgo, an electric vehicle (EV) charging company. She discussed how we can accelerate the transition to net zero emissions in the transportation sector. She demonstrated how policy is necessary to de-risk investments, as consumers will want to make sure there are enough charging stations before buying an EV.

Each of the charging stations bought by EVgo cost half a billion USD, so their business model needs many EVs on the road. The government must play a critical role in creating this energy transition by investing in charging infrastructure, which can encourage demand because drivers will be more willing to buy EVs. EVgo only operates in the U.S., but the infrastructure provided by their business needs to occur at a global scale.

EVgo has partnerships with Uber and Lyft, which is important in reducing emissions because rideshare drivers drive seven times more than the average driver. The two rideshare companies have made net zero emissions commitments by 2030, which means the partnership can facilitate the further adoption of EVs by rideshare drivers.

On a personal level, Zoi encouraged us to vote for policymakers to move our economies forward into a green future. Companies can deploy capital, such as the EV charging stations,

but government policies are the catalyst for establishing a strong motivation and return for that capital. EVgo can scale up their business quickly, but they have to know that EVs will be on the road, and this requires government policy intervention.



Andrei Stanescu/Getty Images

Looking Towards Glasgow Webinar

Closing remarks of Roma Stibravy, President, NGO Sustainability

We have had the most meaningful presentations, for which we say thank you, and have also been honored to have the remarks by this year's President of the UN General Assembly, Abdullah Shahid.

May I quote the following two in closing: David Attenborough, the famous naturalist said recently referring to the Glasgow meetings, "This is humanity's last chance."

At a special meeting this week of the UN General Assembly the UN Secretary General said, "The climate crisis is a code red for humanity."

We are forwarding the transcript of this webinar to The Right Honorable Alok Sharma, MP, British Parliament, President of the Conference, and wish all the official representatives, the best of negotiation for agreed legislation and implementation, as has the European Union, to assure global change away from coal firstly, then the other fossil fuels, to renewables to reach the goal of Zero Carbon by 2050.

NGO Sustainability holds a webinar annually with an array of experts from government, academia, and the private sector on a leading issue facing climate change.

Last year's webinar (October, 2020) was "**The Role of the Ocean on Climate Change and Sea Level Rise.**"



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