Centre for International Governance Innovation

BLOCKCHAIN CLIMATECUP ROUNDTABLE

June 23- 24, 2017
8:30 am – 5:45 pm
Reception 5:45 pm – 7:00 pm
Four Seasons Hotel
Toronto, Ontario

Organized by the Centre for International Governance Innovation (CIGI) the **Blockchain ClimateCup Roundtable** will feature experts in international climate change law and policy with experts in blockchain and distributed ledger technologies (DLT) to explore practical, DLT-powered solutions for tackling climate change under the Paris Agreement.

The Roundtable will open with a series of cutting-edge "proof-of-concept" demonstrations performed by leading blockchain technologists, green finance innovators, and green infrastructure entrepreneurs. These live demos will, illustrate the current "state of the art" with respect to green economy-related blockchain and DLT innovations. Participants will have the opportunity to not only view these exciting technologies in action but also interact with their creators to gain a realistic understanding of both the promise and the limitations of these new technologies within the climate management context.

The second part of the Roundtable will consist of a deep-dive into the Paris Agreement's obligations on specific climate change management issues, including: stocktaking; green finance; capacity-building; technology transfer; market and non-market mechanisms; and public participation and access to information requirements. In addition to legal and policy considerations, discussants will grapple with the political, infrastructural, and funding-related constraints that could potentially aid or impede the further development and deployment of these promising climate change mitigation technologies.

The Centre for International Governance Innovation is a nonpartisan, independent think tank focused on issues of global governance and law, economics and politics, based in Waterloo, Ontario. The International Law Research Program (ILRP) is a ten-year program of international law research and international law capacity building, co-funded by CIGI and the Province of Ontario. The ILRP conducts policy relevant cutting-edge legal research involving academics, public and private sector practitioners, on issues of international economic law, international intellectual property law and innovation, international environmental law and international indigenous law, and intersecting issues of international human rights, development and security.

Please note that the roundtable will take place under the Chatham House Rule. Participants are not obliged to speak and there will be no attribution of any participant's comments in any future report of the meeting:

> *When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed:* https://www.chathamhouse.org/about/chatham-house-rule#sthash.Df84X0vS.dpuf

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AGENDA
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Fri. June 23 18:30 - 21:00	Informal welcome dinner & networking, Four Seasons Hotel, Westwind Room	
Sat. June 24 8:30 - 9:00	Registration and Breakfast	
9:00 – 9:15	Welcome and Introductions	**Oonagh Fitzgerald Julie Maupin**
9:15 – 11:00	State of the technology: Blockchain/DLT for green finance • **Anton Galenovich, Alexey Shadrin & Sergey Lonshakov**, Russian Carbon Fund, *DAO IPCI Impact Mitigation: practical concepts, lessons learned and prospects* • **Cao Yin**, Energy Blockchain Labs, *Utilizing blockchain technology to create carbon credit in China* • **Henry Chan,** ConsenSys, *WeiFund: Crowdfunding on Ethereum* • **Tejas Sawant**, SolarCoin Foundation, *SolarCoin Powering the Energy Transition* • **Michael Casey**, MIT Digital Currencies Initiative, *Using the Blockchain to Affordably Finance Solar Energy in Off-Grid Communities*	Moderator: **Julie Maupin**, Max Planck Institute
11:00 – 11:15	Health break	
11:15 – 13:00	Discussion: Legal, political, & implementation challenges of the Paris Agreement on Climate Change (can blockchain help?) • **Alexandre Gellert,** UNFCCC Secretariat, *The Potential of Blockchain Technology to Enhance Climate Action* • **Marcela Scarpellini**, Right. Based on Science, *Science Based Targets: the right. starting point* • **Nick Beglinger**, CleanTech21, *Blockchain for Climate* • **Maria Netto**, Inter-American Development Bank, *Blockchain as a tool to promote access to finance* • **Claire Henly**, Rocky Mountain Institute/Energy Web Foundation, *Energy Web Foundation – the open source, blockchain-based platform for the energy sector*	Moderator: **Andrei Marcu**, International Centre for Trade & Sustainable Development (TBC)
13:00-14:00	Lunch	
14:00 – 15:45	State of the technology: Using blockchain/DLT to aid the transition to green/low carbon business and energy infrastructures • **Lawrence Orsini**, LO3 Energy, *Distributed Grid Solutions that Bring People, Technology, and Energy Together*	Moderator: **Thomas Chrometzka**, GIZ

	• **Dominik Schiener**, IOTA, *Building a Green Machine Economy: from Vision to Practice* • **Sofie Blakstad**, Stockholm Green Digital Finance, *Trust and Transparency for a Sustainable Future* • **Jason Libersky**, Xpansiv, *Leveraging Existing Commodity Production Data to Deliver Sustainability Objectives* • **Tom Baumann**, Collaborase, *Standards 2.0 Governance Innovation for Blockchain*	
15:45 - 16:00	Health break	
16:00 – 17:00	<u>Breakout sessions</u>: Mapping the gaps between technology, law, policy, and implementation	Facilitators: TBA
17:00-17:30	Reports back from breakout sessions	
17:30 – 17:45	Wrap up and discussion of next steps	Oonagh Fitzgerald Julie Maupin
17:45 - 19:00	Reception	

BLOCKCHAIN CLIMATECUP ROUNDTABLE

PARTICIPANTS

TIMIEBI AGANABA-JEANTY

Timiebi Aganaba-Jeanty is a post-doctoral fellow with CIGI's ILRP Program. While at CIGI, Timiebi's research focuses on the evolving legal principles required to regulate the use of emerging and high technologies in the fight against climate change. Timiebi holds a PhD. and LL.M. in aviation and space law from McGill University. She also has an M.Sc. in space management from the International Space University, Strasbourg, France, and an LL.B. from the University of Leicester in the United Kingdom.

SAM ANISSIMOV

As in-house counsel, Sam Anissimov handles CIGI's legal affairs. In addition, he provides research support to CIGI's international law research program, as part of which he conducts work on intellectual property law and innovation.

TOM BAUMANN

Tom Baumann has worked on climate, sustainability and technologies for over 20 years. Tom co-founded ClimateCHECK, the GHG Management Institute (online capacity building), Collaborase (Standards 2.0), and Xpansiv (Blockchain/digital solutions). Tom is the International Chair of the ISO Climate Change Standards Committee. Tom has degrees in economics and engineering, and is a certified knowledge manager. Tom is based in Ottawa, Canada.

NICK BEGLINGER

Nick Beglinger is a Swiss economist (LSE), co-founder and CEO of the Cleantech21 foundation since 2008. His professional focus area is sustainable development at the crossroads of finance, innovation, and regulation. He addresses competitiveness issues in the light Paris-compatible development, and in particular carbon pricing. Between 2009 and 2016, Nick acted as president of Switzerland's first green business association, swisscleantech, and thereby influenced the country's climate, energy, and mobility policy. At COP22 in Marrakesh, Nick initiated the #ClimateBC project, bringing blockchain technology to UNFCCC. He serves on the board of the Global Infrastructure Basel Foundation and is part of WWF's Leaders for Nature.

SOFIE BLAKSTAD

Sofie Blakstad is CEO of hiveonline, the financial trust platform for small businesses. A leading expert in transforming organizations, Sofie has been building banks for most of her career, but is now addressing the gap they leave for underserved customers, while working on her second book, "Let's not build a bank!". Sofie is passionate about inclusion, opera and bees and lives in Copenhagen with her cats.

MICHAEL CASEY

Michael Casey is a Senior Advisor for the Digital Currency Initiative at MIT's Media Lab. There he leads research blockchain technology, with a focus on its application for the development of solar microgrids. He is also a managing partner at Agentic Group, which is developing systems of collaborative innovation around decentralized applications. Prior to joining MIT, Michael was a senior columnist covering global finance at The Wall Street Journal. He is the author of four published books, including The Age of Cryptocurrency, co-authored with Paul Vigna. Its sequel, The Truth Machine, is slated for publication in early 2018.

HENRY CHAN

Henry Chan is the Product Lead for WeiFund, one of the product spokes under the ConsenSys umbrella. Prior to joining ConsenSys, Henry co-founded Deloitte Canada's blockchain practice and led their technology team. He has worked with Fortune 500 clients in the financial, healthcare, and public sectors with a focus on the Americas and Asia Pacific markets. Currently residing in Toronto, Henry spends his spare time working with startups to build their businesses.

LING CHEN

Ling Chen is a research associate with the International Law Research Program at the Centre for International Governance Innovation. He holds an LL.M. from the University of Toronto and an LL.B. and an LL.M. from Beihang University in China.

THOMAS CHROMETZKA

Thomas Chrometzka is a renewable energy enthusiast currently the Director Renewable Energy with GIZ Thailand. Thomas joined GIZ to support creating markets for renewable energy in Southeast Asia. His team works with the Thai Ministry of Energy on enabling sustainable business partnerships to support faster renewable energy take-up in the region. Lately, he has been working on implementing fuel saver and hybrid-grids solutions on Thai islands, which made him look toward blockchain for new solutions. Since blockchain technology is diluting the borders between formerly separate market mechanisms, impact on the energy sector will be significant.

STANISLAS DUPRE

Stanislas Dupré initiated the 2° Investing Initiative and now serves as Director. Previously Stanislas Dupré was Executive Director of Utopies (CSR consultancy) after a career as CSR consultant and R&D manager. Stanislas has been working on 2° investing topics since 2007 when he developed the first assessment methodology for 'financed emissions' of banks and diversified portfolios (for Caisse d'Epargne/Natixis, the ADEME, WWF and Friends of the Earth). In 2010, he wrote a book about the role of financial institutions in financing the energy transition. Stanislas is also Non-Executive Director of a green private equity fund (NEF-CEM), lecturer at Paris-Dauphine University and member on the expert committees of the NYSE-Euronext Low-Carbon Index and Novethic.

OONAGH FITZGERALD

As Director of CIGI's International Law Research Program, Oonagh Fitzgerald oversees its international economic law, environmental law, intellectual property law and innovation, and new indigenous law research agenda. She has extensive experience as a senior executive providing legal policy, advisory and litigation services and strategic leadership in international law, national security, public law, human rights and governance to several federal departments including Justice Canada, National Defence and the Canadian Forces, and Privy Council Office.

ANTON GALENOVICH

In 1983, Anton Galenovich graduated from the Lomonosov Moscow State University Institute of Afro-Asian Studies. In 1987, Anton obtained his PhD in the History of International Relations and Diplomacy of China. He has more than 30 years of experience in international political and economic relations, and almost 20 years of experience in international climate policy issues, environmental market-based mechanisms. He has been the Chairman of Association of European Business in Russia Climate Policy Working Group and an active participant of international and Russian climate policy private-public dialogue since 1998. He is a researcher and key author of studies and papers on environmental and climate market-based mechanisms.

ALEXANDRE GELLERT PARIS

Alexandre Gellert Paris, as technical officer at the UNFCCC Secretariat, has established and worked in the UNFCCC regional collaboration centre (RCC) for Latin America, in Colombia, and for the Caribbean region, in Grenada. His current position is at the Energy Team, MRV Standard Setting, Regulatory and Development Unit (RDU) in the Sustainable Development Mechanisms (SDM) programme. Alexandre holds a master's degree in fuel cell technologies, postgraduate course on renewable energy from the United Nations University (UNU), in Tokyo, Japan. He participated in the 2016 global solutions program (GSP) of Singularity University held at NASA, with full scholarship from Google.

JOHN GODFREY

John Godfrey is Ontario's Special Advisor for Climate Change. A French Historian by training, he received his B.A. from the University of Toronto, and his M.Phil. and D.Phil. from Oxford University. He taught History at Dalhousie University for 17 years, during 10 of which he was also President of the University of King's College. He was Editor of the Financial Post in Toronto for 4 years, Vice-President of the Canadian Institute for Advanced Research, then Member of Parliament for Don Valley West for 14 years, during which he served as Paul Martin's Minister of State for Infrastructure and Communities. He was then Directeur General of the Toronto French School for 6 years.

YVES GUILLAUME A. MESSY

Yves Guillaume A. Messy leads QGS Technologies, a London (-based), insurance technology startup that eliminates political, geopolitical, and cyber risks to investment assets through the combined use of Artificial Intelligence, Blockchain, and Virtual Reality technology. Yves is also the author of "Sustainable Finance: Investment Strategies for the Social and Environmental Purpose Investor. First Edition", a book on asset management approaches to financing the transition to a carbon-neutral global economy. Yves studied Political Science at the University of Toronto, St George Campus, and is a member of the UK's Chartered Insurance Institute with a Lloyds of London Market Insurance specialism.

CLAIRE HENLY

Claire Henly is a Senior Manager at the Energy Web Foundation where she leads the organization's implementation projects. Claire has worked at the Rocky Mountain Institute, a leading U.S. energy sector think tank, for 4 years on electricity sector planning and policy reform projects across the world. Prior to starting at RMI, Claire co-founded Red Ox Systems, a fuel-cell startup, and has worked for McKinsey & Company, BHP Billiton and Goldman Sachs. She received a B.S. in Environmental Engineering from Yale University.

JASON LIBERSKY

Jason Libersky leads the development of Xpansiv's data integration, analytics, and visualization platform. Jason has an extensive career as a data scientist, computational physicist, analyst, entrepreneur, and thought leader with many years of engineering and data analytics experience in the oil, gas, and energy industry, at Sandia National Laboratory, and at New Mexico Institute of Mining and Technology. Jason also developed the first fully digital voter registration app during the 2012 presidential campaign. Jason's work has been featured on PBS News Hour, NPR, Huffington Post, and CNBC.

MARC LIJOUR

Marc Lijour is involved in digitizing public and private organizations for the last 10 years. He is also involved in board and advisory positions at ColliderX (the world-first crowdfunded Blockchain R&D Hub), the Information and Communications Technology Council (ICTC), the Toronto French Business Network (TFBN), and French Tech in Toronto.

DAVID LIVINGSTON

David Livingston is an associate fellow in Carnegie's Energy and Climate Program, where his research focuses on geoeconomics, markets, and risk. He is also a nonresident associate of Carnegie Europe in Brussels. He previously worked at the Office of the U.S. Trade Representative, the World Trade Organization and the UN Industrial Development Organization. He received a BA from the University of Southern California and an MSc from the University of Oxford.

SERGEI LONSHAKOV

Sergei Lonshakov is a Blockchain and smart contract projects developer and Airalab team leader. Sergei has been working (performing R&D) on: Bitcoin/Altcoin/cryptocurrency projects since 2011, Smart contract/Ethereum platform projects since 2014, and DAO (decentralized autonomous organization) projects since 2015. Since September 2015, Sergei has been researching capabilities of Ethereum platform for DAO and IoT solutions.

SILVIA MACIUNAS

Silvia Maciunas is the deputy director of international environmental law, with CIGI's International Law Research Program. In this role, Silvia provides strategic guidance, operations coordination and management of the thematic area. Silvia comes to CIGI from Global Affairs Canada, where she served as deputy director within the Oceans and Environmental Law Division. Prior to that, Silvia was the sole proprietor of a law firm and a consultant in international environmental law.

NORM MALLOCH

Norm Malloch is the director of the Deloitte Innovation Lab. He is responsible for developing and coaching high performance teams to create digital product prototypes that are used by Deloitte and its customers to validate new product and service concepts in the market. The lab focuses on validating the value proposition of emerging technologies such as blockchain, machine learning, and IoT while challenging partners, senior managers, and clients to think differently about innovation and value creation in this new economic environment. Prior to joining Deloitte, Norm worked as an Executive Mentor at the Laurier LaunchPad Program and co-founded two technology companies.

ANDREI MARCU

Andrei Marcu is currently a Senior Fellow at the International Center for Trade and Sustainable Development and a Senior Advisor at the Center on Regulation in Europe. Andrei has been one of the corporate sector pioneers in the area of climate change, greenhouse gas (GHG) markets and related areas on sustainable development. Since 1993, Andrei has been actively involved in many areas of climate change related initiatives, including as Chief Executive Officer of BlueNext, the environmental exchange, based in Paris. Andrei was the Founder and President and CEO of International Emissions Trading Association (IETA, a world-class business association with offices in Geneva, Brussels, Washington and Ottawa. While at Ontario Hydro for 18 years, Mr. Marcu worked in various areas of the corporation including, system operations, climate change, regulatory affairs and international cooperation as well as Chief of Staff to the Chairman, Mr. Maurice Strong. He has also worked in the United Nations Development Program in New York on issues of development, private sector development and climate change, as Manager of Corporate Cooperation.

JULIE MAUPIN

Julie Maupin is a leading expert on the legal, regulatory, and economic policy dimensions of blockchains and other distributed ledger technologies. A dual-trained lawyer and economist, her expertise spans cryptocurrencies, smart contracts, prediction markets, data analytics and artificial intelligence in IoT environments. Julie is a Senior Research Fellow at the Max Planck Institute for Comparative Public and International Law in Heidelberg, Germany where she investigates effective governance models and regulatory approaches to emergent technologies. She also holds external appointments as Senior Research Fellow at the Centre for International Governance Innovation (Canada) and at the University College London Centre for Blockchain Technologies. She sits on the Fintech Advisory Board of the German Ministry of Finance, the G20 Digital Economy Task Force, the UN Internet Governance Forum, and is a strategic advisor to the IOTA Foundation.

MARIA NETTO

Maria Netto has an MA in economy from the International Studies Institute of Geneva. She works at the Inter-American Development Bank (IDB) as lead specialist in capital markets and financial institutions and is responsible for developing innovative financing strategies with local financial institutions in the LAC region. Previously, Maria also worked in the United Nations Development Programme (UNDP) where she was responsible for overseeing global projects to assist countries to assess investments and financial flows and policy options to integrate green business in different sectors and economic activities. Finally, Maria worked for more than 10 years in the Secretariat of the Convention on Climate Change (UNFCCC), where, among others, was responsible for leading the institution's work on bilateral and multilateral financial cooperation, investment and financial flows to address climate change and the development of carbon markets under the Kyoto Protocol.

LAWRENCE ORSINI

Lawrence Orsini is the founder of LO3 Energy, a groundbreaking energy and tech company working on innovative new hardware and software products within the emerging distributed energy and computation industry. His wide range of experience in the energy sector ranges from the development of policy and regulatory frameworks to relationship management on energy solutions with Fortune 100 utility and corporate clients. Prior to LO3 Energy, Lawrence was the Director of New Products for CLEAResult, working as the strategic lead on the development, piloting and deployment of new utility service offerings. This focused on energy efficiency, microgrid, and load management for commercial, industrial and residential market sectors.

MARIA PANEZI

Maria Panezi is a post-doctoral fellow with CIGI's International Law Research Program. She holds a Ph.D. in Law from Osgoode Hall Law School. She has published articles on issues related to public international law and was a W. C. Langley Scholar of International Legal Studies at New York University School of Law, where she received her LL.M. Maria has been an adjunct professor at Osgoode Hall Law School and she is the recipient of the Ian Greene Award for Teaching Excellence. She has also been a visiting scholar at Harvard Law School and the Fletcher School of Law and Diplomacy.

DAVID RYFISCH

David Ryfisch is a climate finance advisor with GIZ in Germany. There, he works predominantly on multilateral development banks and reporting of climate finance. Previously, he was with the UNEP DTU Partnership and the Inter-American Development Bank (IDB) where he looked at barriers, in particular financial market constraints, preventing the implementation of mitigation actions in developing countries and carried the topic of transparency. David holds a Master's degree in International Economics from the Graduate Institute Geneva.

GUNITA SAINI

Gunita Saini is a product manager and technical lead at the Deloitte Innovation lab. Her background is computer engineering and over several years, she has worked with startups, big companies and now a startup in a big company. We at the lab prototyped Mercury project for international trade finance last year. Since then we have been dabbling with the blockchain space, looking for interesting use cases and keeping us up to date with the technology.

MARCELA SCARPELLINI

Marcela Scarpellini is a young environmental lawyer currently working at right. based on science UG, a young consultancy located in Frankfurt, Germany. Marcela is currently working at developing a legal framework for understanding the potentiality that science based targets provide for enabling business models to adapt to a world shaped by climate change, specifically in the context of 2 °C compatibility in order to comply with the goal reached upon by the Paris Climate Agreement. Working with scientifically based targets provides a context in which to frame INDC's, and brings forward the possibility of determining and measuring the potentiality of INDC's towards the attainment of the climate goal.

DOMINIK SCHIENER

Dominik Schiener is a young entrepreneur from Italy, who has been in the Blockchain space for more than 5 years. He has had several Blockchain startups in Switzerland, UK and Germany. He is co-founder of IOTA, which is a new distributed ledger architecture, as well as a non-profit Foundation in Germany.

KATIE SULLIVAN

Katie Sullivan serves as Managing Director of IETA, the global business voice for the intersection of markets and climate change. On behalf of IETA's 150+ business members, Katie leads efforts to inform climate policy & market design across The Americas and Asia-Pacific. She also manages IETA's growing work on international aviation and financial instruments to scale "clean" private capital. Katie's a member of University of Toronto's Environmental Finance Committee, Ivey Foundation's Climate Advisory Committee, and the Climate Advisory Group to Ontario's Minister of Environment & Climate Change. She also serves as Board Member to the newly-launched International Carbon Capture & Storage (CCS) Knowledge Centre.

RUSSELL VERBEETEN

Russell Verbeeten joined the Ethereum project in March of 2014 after completing a Masters in Social Science of the Internet at Oxford University. With an undergraduate degree in electrical and computer engineering from the University of Toronto, and successful exits at startups where he played the roles of CTO and founder, Russell joined ConsenSys in June of 2015 as a principal operations and product lead.

JULIANNA WEI

Julianna Wei has five years of experience in project management and energy codes and standards research. Her exposure in areas – including technical research, policy development, program design assistance and evaluation – provides her with a unique perspective that span across major aspects of the utility energy efficiency arena. She also supports large-scale advocacy and outreach activities with industry stakeholders, regulatory agencies and building science researchers. Prior to her current post, Julianna worked for a utility-scaled solar PV manufacturer and developer, where she interfaced between the R&D and business departments. She assessed technology options, coordinated the permitting process for a manufacturing plant, and performed test sites field data analyses to establish performance metrics for Power Purchase Agreements. Julianna received both the M.S. and B.S. in Mechanical Engineering from the University of California, Irvine.

JIM WHITESTONE

Jim Whitestone is the Assistant Deputy Minister of the Environmental Programs Division (EPD). Since joining the Ministry of the Environment in 2007, Jim has been a key leader in the modernization efforts of the Ministry of the Environment and Climate Change to implement a modern regulatory and modern service provider model that uses a risk-based approach to achieve positive human health and environmental outcomes and promotes innovation within the ministry and Ontario's environment sector. Prior to joining MOE, Jim worked extensively on land and resources policy files in the Cabinet Office of the Ontario Government and in the Ministry of Transportation (MTO). As Director of the Transit Policy Branch at MTO, Jim led the development of the transit partnerships program and coordinated program implementation across four ministries. Jim holds Masters and Bachelor's Degrees in Agricultural and Resource Economics from Michigan State University and the University of Guelph as well as a Business Certificate from the University of Toronto.

ILIANA ORIS VALIENTE

Iliana Oris Valiente (CPA, CA) is the founder of ColliderX, the world's first open source and crowdsourced applied R&D hub for blockchain and related technologies. Previously, Iliana was the catalyst in getting Deloitte actively involved with all things blockchain, and co-founded the Rubix by Deloitte Blockchain practice in 2014.

CAO YIN

Cao Yin is the Founding Partner and Chief Strategy Officer of the Energy Blockchain Labs, which is the world first company focused on blockchain technology green finance application. He also is the chief expert of blockchain as well as the principle energy analyst of China Cinda, which is the biggest financial asset management company in China. Cao Yin also performs as strategic advisor for several famous energy and finance companies. He is one of the earliest proponents of the energy Internet concept in China. He participated in the formulation of China's national definition of Energy Internet and participated in the formulation and popularization of China's National Energy Internet Action Plan as one of the leaders of the task force. He has written several books, including *Development of Energy Internet*, *Introduction of Energy Internet*, and Internet+: *National Strategic Action Roadmap*.