# PROGRAM OPENING CONFERENCE

# Fate of Nations, Natural Resources and Historical Development



#### 3-4 March 2017

### Royal Norwegian Air Force Academy Trondheim





Friday, 3 March 2017				
9.15	Welcome and Introduction Hans Otto Frøland, NTNU			
Theme 1: Companies and Cartels Chair: Jonas Scherner, NTNU				
9.25	Introduction Espen Storli, NTNU			
9.35	Competing in Global Chains: From Commodities to Brands Teresa da Silva Lopes, University of York			
10.20	Coffee & Tea			
10.30	Finnish lumber cartels: an untold story Elina Kuorelahti and Niklas Jensen-Eriksen, University of Helsinki			
11.00	Hunting grounds for their monopoly: France, Italy and their state oilmen Marta Musso, European University Institute			
11.30	Lunch			
Theme 2: Political Regulation of Natural Resources Chair: Mats Ingulstad, NTNU				
12.30	Introduction Pål Thonstad Sandvik, NTNU			
12.40	The relationship between economic and political change Colleen Dunlavy, University of Wisconsin			
13.30	Coffee & Tea			
13.45	Natural resource rents and the political economy of governance in Africa Rod Alence, University of the Witwatersrand			
14.15	Creating private property: the introduction of individual fishing quotas in Norway and Peru Gregory Ferguson Cradler, Max Planck Institute			
14.45	Coffee & Tea			





Case Studies and projects Chair: Hans Otto Frøland, NTNU			
15.15	Building a Norwegian oil industry, 1972-2016 Einar Lie, University of Oslo		
15.45	Norwegian oil policy, an insider's perspective Ola Borten Moe, Former Minister of Petroleum and Energy		
16.15	Coffee & Tea		
16.30	Metals and material culture Sabine Luning, University of Leiden		
17.00	A self-contained British empire in metals: Forging a British imperial minerals strategy, 1913-1927 Roy MacLeod, University of Sydney		
17.30	Short break		
17.40	Copper, development and environmental technology Ann-Kristin Bergquist, Umeå University		
18.10	Common land and economic development in Spain Francisco Beltrán Tapia, University of Cambridge		
19.00	Dinner at the Airforce Academy		





Saturday, 4 March 2017			
Theme 3: International Institutions and Raw Materials Chair: Pål Thonstad Sandvik, NTNU			
9.15	Introduction Mats Ingulstad, NTNU		
9.25	The league of nations, soft commodities and positive security Patricia Clavin, Oxford University		
10.15	Coffee & Tea		
10.30	UNCTAD and the Rhetoric of Resources in the 1960s Richard Toye, University of Exeter		
11.00	EEC-Third World relations and resource governance Guia Migani, François Rabelais University		
11.30	Lunch		
Theme 4: War and Natural Resources Chair: Espen Storli, NTNU			
12.30	Introduction Jonas Scherner, NTNU		
12.40	International business, access to resources and the transformation of warfare in the twentieth century Neil Forbes, Coventry University		
13.30	Coffee & Tea		
13.45	Resource dependence and World War II: The case of Japan Tetsuji Okazaki, Tokyo University		
14.15	Tungsten in the Second World War: Germany, China, Iberia and Japan Joan Maria Thomàs, Universitat Rovira i Virgili		
14.45	Coffee & Tea		
15.00	Halting the flow of raw materials, The WW1 blockade of Germany Knut Ola Naastad Strøm, University of Gothenburg		
15.30	Urban mining in total war Chad Denton, Yonsei University		





#### **ABSTRACTS**

#### Fate of Nations, Natural Resources and Historical Development

#### **Competing in Global Chains: From Commodities to Brands**

Teresa da Silva Lopes, University of York

There is wide research on the evolution of global xcommodity trading, which highlights the key role of commodities in countries' economic development and in the process of globalisation (Habakkuk, 1962; Porter, 1990; Gylfason, 1999; Sachs and Warner, 2001; Radetzki, 2008). This process is associated with a series of actors located in different countries, interconnected through a diversity of business links within global chains (Gereffi and Korzeniewicz, 1994). These actors include the suppliers of raw materials, distributors, end consumers, and also recycling businesses, among others (Coe et al, 2008; Cattaneo et al, 2010; Neilson, 2015). A central topic within the literature of global chains, relates to their impact on the economic development of the countries involved, in particular the suppliers of raw materials from developing countries (Sachs and Werner, 2001; WTO, 2013; ECB, 2014; OECD, 2015). Most of these studies draw on data at country level, and do not acknowledge the central role that multinational enterprises had in transforming the world economy, in particular from the late nineteenth century until the present day (Wilkins, 2016; Gordon, 2016). This paper addresses this topic by looking at how, historically, firms with multinational activity and entrepreneurs, producers and distributors of various types of renewable natural resources changed the dynamics and the power relations within global value chains, by moving from exclusively trading commodities to also trading branded goods globally. The paper looks at the cases of wine, coffee, tea, and cocoa trading. It draws patterns in terms of the strategies and organisational forms followed by different agents, showing how differentiation through branding and protection of intellectual property increased their power within global chains, and also contributed to the economic development.

#### Finnish lumber cartels: an untold story

Elina Kuorelahti and Niklas Jensen-Eriksen, University of Helsinki

It is an often repeated argument in academic research that timber industry has rarely formed international or national cartels while other forest industry sectors (paper, pulp) have done so actively. It is true that timber firms were less organised than, for instance, pulp and paper companies, but the argument of non-cartelised timber sector is nevertheless an exaggeration. Before World War II, Finnish timber firms had, in fact, several export cartel agreements with the Swedes. Finland was also a member of, and the biggest exporter in, the European Timber Exporters' Convention (ETEC)— an output regulation scheme of nine countries—between 1936 and 1939. After the war, private cartels were not possible because of governmental regulations on foreign trade. However, Finnish timber export trade did have cartel-like features. The trade associations of the industry played a key role in the public regulation institutions. These government regulations were gradually abolished from the 1950s onwards, and there is some evidence of renewed private co-operation between Finnish, Swedish and Soviet producers in later time periods. The key theme of our presentation is the involvement of the Finnish government in competition regulations of





timber firms. We show, in particular, that the urge to participate in the ETEC negotiation and agreement in the 1930s did not come from the companies but from the Finnish government. Majority of the timber firms were, in fact, against the international cartel, but staying out of the ETEC process was feared to create diplomatic problems for the Finnish political leadership.

Hunting grounds for their monopoly: France, Italy and their state oilmen Marta Musso, European University Institute

#### The relationship between economic and political change

Colleen Dunlavy, University of Wisconsin

While the relationship between political and economic change might profitably be explored in theoretical terms, this paper brings to bear an "evidence-based" (aka historical) perspective. This perspective is grounded in the American experience during the 19<sup>th</sup> and 20<sup>th</sup> centuries, from which, I will argue, broader lessons may be drawn. It focuses, first, on the multiple dimensions of political change—regulation, i.e., what government *does to* business; promotion, i.e., what government *does for* business; the legal infrastructure, which sets the ground rules of business activity; and the political structure, an often taken-for-grant background condition that ineluctably shapes economic activity. It then attends to two dimensions of economic change—changes in industrial structure and in the geographical scale of enterprise. Within this framework, it then explores the dynamics of political and economic change, with special attention both to moments when the scale of enterprise exceeds the scale of political jurisdiction and to the special case of natural resources, whose immobility alters the dynamics of political and economic change.

## Natural resource rents and the political economy of governance in Africa Rod Alence, University of the Witwatersrand

Although sub-Saharan Africa's disappointing record of development is often blamed sweepingly on bad governance, today the quality of governance varies as much within the region as it does across the rest of the developing world combined. In this study I examine two major causes of this variation: natural resource rents and democratic institutions. Analyzing cross-national data on 47 African countries from 1990 through 2014, I show that resource-rich and resource-poor countries were no more or less likely to become democracies during the post-Cold-War wave of democratization, yet the stakes were especially high for resource-rich countries. Using an indicator of developmental governance that incorporates government effectiveness and corruption control, I show that resource rents magnify the governance advantages enjoyed by democracies over non-democracies, and that the only countries that rents "curse" with bad governance are non-democracies. Democratic institutions, even highly imperfect ones, powerfully condition the relationship between natural resources and the quality of developmental governance in Africa.





## Creating private property: the introduction of individual fishing quotas in Norway and Peru

Gregory Ferguson Cradler, Max Planck Institute

This paper discusses the move to market-based forms of resource regulations in Norwegian and Peruvian fisheries from the 1990s to the present. Regulation of fish resources is not merely a problem in need of a solution; it is a problem first and foremost in need of a definition. Therefore, the paper begins with an analysis of how policy-makers and researchers – both domestically and internationally – articulated the *problem* of fisheries management in Peru and Norway with particular focus on how the problem of fisheries administration came to be increasingly defined in terms of maximizing fisheries rents. The tools and concepts used to define the problem became, subsequently, terms in which policy-makers and experts proposed to answer the puzzle of how to facilitate productive fisheries. Real-world policy-making, however, proved to be significantly more complex. The second section of the paper traces the ways in which management regimes, based only partially on economic theory, were instituted. These regimes were as much a reaction and answer to political problems as they were solutions to problems of economic organization informed by economic theory. State representatives used the technocratic instruments of economic theory and accounting as a means of depoliticizing their actions as well as depoliticizing entire spheres of state activity. Technocracy articulated state economic objectives in the seemingly objective and apolitical language and models of technocratic governance thereby re-defining what was and should be subject to political debate and democratic decision-making in the first place. Market-based mechanisms for resource administration brought the state into much deeper engagement with political economies but did so under the rhetoric of free markets and nonintervention.

#### Copper, development and environmental technology

Ann-Kristin Bergquist, Umeå University

This presentation is focused on the severe environmental challenge that was associated with the expansion of the copper industry before the Second World War. While much of the literature in this area has covered experiences from the United States and Britain, this presentation tells the story about the development of the Swedish-based mining company Boliden in the interwar period. It demonstrates the proactive strategies that the company adopted to deal with the potential for severe environmental problems associated with the establishment of its large copper smelter in the 1920s. The Boliden case shows how international networks, personal experience, and knowledge transfer from the U.S. but also from the German copper industry help to explain the importance given to environmental issue by the Swedish industrialists. The case also gives information of how global players involved in the Swedish mining project, such as The Guggenheim Brothers, perceived the environmental issue. Pollution abatement technology appears to have been of a wider strategic importance than mitigating 'copper smoke' damages on the surrounding environment. Sulfur-abating technologies were also a means by which to enter, and possibly even control, the cartelized sulfur market.

#### Building a Norwegian oil industry, 1972-2016

Einar Lie, University of Oslo





#### Metals and material culture

Sabine Luning, University of Leiden

## A self-contained British empire in metals: Forging a British imperial minerals strategy, 1913-1927

Roy MacLeod, University of Sydney

During after the Great War, in the wake of supply crises and fears of foreign control of strategic minerals, a combination of British ministers, Dominion politicians, imperial businessmen, and earth scientists sought to develop a system to preserve British control over imperial supplies of key ores and metals. In peace, as in war, the principles of cooperation in exploration, production and supply were central to the design and pursuit of this strategy. Between 1917-19, these principles gave impetus to the creation of two agencies embracing the interests of both industry and government -- the British Metal Corporation (BMC) and the Imperial Minerals Resources Bureau (IMRB).

Following long debates, by the mid-1920s, this promising vision of imperial unity was troubled by the economic and political realities of a competitive world. The preferences of Dominion and colonial governments, the interests of international corporations, and the economic consequences of a post-war return to fiscal orthodoxy all took a heavy toll, forcing Britain to consider alternative ways of achieving 'mineral security' in the not unlikely event of a future industrial war.

This paper represents a short introduction to a long-term project being undertaken by an 'Empire Group' of historians -- working in Britain, Canada, and Australia -- who are examining the 'British World of Metals'. This work will take us across the globe in the study of factors that helped shape Britain's commercial, industrial, and overseas history during the twentieth century.

#### Common land and economic development in Spain

Francisco Beltrán Tapia, University of Cambridge

This presentation provides an overall assessment of the impact of the privatisation of the commons in 19th century Spain. Common lands appear to have been reasonably well managed and their dismantling did not foster agricultural productivity. Instead, the privatisation process negatively affected the economic situation of a large proportion of rural households and local councils, as well as deteriorating the stock of social capital. Therefore, the long-standing belief in the existence of a trade-off between equity and efficiency actually turns out to be misleading.

#### The league of nations, soft commodities and positive security

Patricia Clavin, Oxford University

This paper develops what the German Liberal Politician and Economist Moritz Bonn described as the 'deep-seated fear of dependency' in relation to ideas and practices of global order and commodities in the period after 1918. It explores the emergence of soft commodities and raw materials in the League's international agenda, and the ways in which they contribute to what became known as the League's positive security agenda in the 1930s.





The intention of the paper broadly is to sketch out some of the ways that commodity history can be used to address major approaches and questions in international history.

#### UNCTAD and the rhetoric of natural resources, 1964-72

Richard Toye, University of Exeter

This paper investigates how ideas about natural resources fitted in to broader arguments about economic development during a crucial phase of North-South relations. As US hegemony came under challenge in the early 1960s, a combination of political pressures and radical economic thinking created a new international discourse that emphasised that primary-producing countries were at a particular disadvantage compared with industrialised ones, and that they were even actively exploited by them. As manifested at the first two UNCTAD conferences (1964 and 1968) this discourse equated 'natural resources' (and like terms such as 'natural wealth') directly with oil and mineral resources; and representatives of the industrialised nations also used the terminology in the same way. However, at UNCTAD III (1972) a much more expansive usage of 'natural resources' was in play. Sitting alongside the established view, there were now warnings that 'Environmental pollution and the irresponsible use of exhaustible natural resources are positively alarming.' The paper considers the origins and significance of this shift in the light of rising awareness of 'the limits to growth' and the geopolitical shifts that accompanied it.

#### **EEC-Third World relations and resource governance**

Guia Migani, François Rabelais University

Environmental concerns started to become a global issue throughout the 1970s and 1980s. They were gradually incorporated in the activities of various international organizations, such as the UN, the World Bank and the EEC, which created an Environmental Problems Unit inside the Industry Directorate-General in 1971. As noted by Tiago Faia, the World Bank became the first multilateral or bilateral agency to secure an environmental adviser in its ranks (1970) but the UN assumed early leadership on the subject. It endorsed the existence of a direct link between development promotion and environmental protection at the 1972 UN Conference on Human Environment in Stockholm. This paper, based on EEC and DAC archives, aims to analyze how the EEC developing policy integrates the environmental issue. After a presentation of the first two Lomé Conventions (1975 and 1979) we will see how in the 1980s thanks to a new international consciousness the environmental issue became an essential element of the EEC development policy towards the ACP, Asian, Latin-America and Mediterranean countries. The paper will focus on the actions taken by the European Community for the preservation of the natural resources in the Third World and will associate this evolution to the international debate about the sustainable development.

## International business, access to resources and the transformation of warfare in the twentieth century

Neil Forbes, Coventry University

With the foreign policies pursued by states in the twentieth century becoming increasingly entangled with commercial considerations, the potential existed for a complexity of geopolitical interactions to cloud judgements over how best to ensure national security. For Britain, nothing





was more important than ensuring the defence of the home nation and the Empire from attack by its enemies. The First World War had demonstrated unequivocally that only those states with assured access to supplies of vital raw materials, large-scale manufacturing capacity and advanced technological know-how could hope to endure in a global conflict. These challenges were brought into sharp relief during the international crisis of the 1930s. The attempts to re-organise the national economy to take such strategic considerations into account became a defining characteristic of Britain's rearmament efforts as preparations to fight a war, particularly a war against Germany, intensified from 1936. Some argued in favour of trying to take control over the trade in vital raw materials in order to restrict supplies to Germany and ensure an adequate supply to Britain. But imposing controls in peacetime risked bringing war closer. Moreover, it would have certainly brought to an end a range of international business contacts which provided a channel through which valuable intelligence and other information was passed to Britain. When war came, resources were mobilised at a level that gave some hope of sustaining a long, drawn-out conflict, But, unquestionably, the rearmament drive from the mid-1930s achieved only just enough to allow defeat to be staved off – an outcome which was, ironically, partly the result of the transfer of industrial technology, processes and equipment from the Third Reich.

#### Resource dependence and World War II: The case of Japan

Tetsuji Okazaki, Tokyo University

During the World War II, the Allied Nations imposed a strict blockade on Japan, which depended essential raw materials on import, especially from the Allied Nations and their colonies before the war. However, Japan maintained munitions production until the final stage of the war. In this presentation, I will address how and why the Japanese economy was so resilient on the blockade during the war.

In the presentation, first, the role of international trade in the prewar Japanese economy is summarized in a historical and comparative perspective. It is shown that the ratio of import and export to GNP increased since the late nineteenth century to the 1930s, while the percentage of raw materials in the import went up. Because those raw materials included essential commodities such as mineral oil and scrap, it was supposed that the embargo of those commodities by the Allied Nations had a serious impact on Japan. Indeed, this was the reason why the Allied Nations took a strategy of embargo as a threat to Japan, and reacting to it Japan opened the war with these countries and expanded its territory to construct "Great East Asia Co-Prosperity Sphere."

Second, however, the Great East Asia Co-Prosperity Sphere did not work well to provide Japan with raw materials. This was principally because of the shortage of marine shipping capacity. Consequently, the ratio of import and export to GNP declined sharply from 30.5% in 1937 to 4.7% in 1944.

Third, it is remarkable that in this circumstance, real GNP of Japan did not decline substantially and munitions production was maintained, and in this sense the Japanese economy was fairly resilient to the blockade, given the high import dependence before the war. This presentation stresses the role of planning and control in maintaining war production under the blockade. The system of planning and control worked to concentrate scarce resource on strategic purposes efficiently, and to substitute domestic raw materials for imported ones. I will illustrate how this system worked, focusing on the case of steel production.





## Tungsten in the Second World War: Germany, China, Iberia and Japan Joan Maria Thomàs, Universitat Rovira i Virgili

This paper studies the supply to Germany and Japan of tunsgten/wolfram, a strategic material, essential to the warfare, during the Sino-Japanese War and the Second World War, as well as the commercialization of this ore by China, Portugal and Spain. The paper analyzes the economical strategies of the five aforementioned countries, their interactions, and the military, political and economical aspects involved. The paper expands the scope of an earlier study about the so-called *Battle for Wolfram* that confronted Nazi Germany and the Allied powers in Francoist Spain between 1941 and 1944.

### Halting the flow of raw materials, The WW1 blockade of Germany

Knut Ola Naastad Strøm, University of Gothenburg

The three Scandinavian countries' experience of the Entente blockade of Germany during the Great War was in many respects a shared one. Not just because they faced the same challenges, but also because the western allies treated the individual Scandinavian states as parts of a whole. From 1917 onwards, Britain and the United States gradually became better at coordinating their policies. Improved coordination allowed the Entente powers to adapt their blockade efforts towards each Scandinavian state, so as to maximise pressure on the other two. Although the various Danish, Swedish, and Norwegian governments all held largely similar views on the need to maintain neutrality and economic prosperity, they went into the war with very different ideas about how to achieve this. These different ideas helped shape their respective responses to the challenges of economic blockade and political isolation, which hit with full force from 1917. Their failure to cooperate effectively on economic issues left them highly vulnerable to pressure from the western allies, once that pressure became effective in 1917/18. As a result, all three Scandinavian countries came out of the war with comprehensive trade agreements with the Entente powers. These agreements not only regulated their trade with the warring powers, but also with each other.

#### Urban mining in total war

Chad Denton, Yonsei University

The development of German metal requisitioning policies from 1914 to 1945, both domestically and in German occupied territories, illustrates how the Germans learned from their prior experiences of occupation, and how the French learned from the Germans. Continental Europe had few natural deposits of metals critical to munitions production, in particular copper, tin, lead, and nickel. When the Allied blockade effectively cut off Germany from foreign imports in 1914 the German military implemented widespread metal requisitions and salvage drives. In the 1930s, Nazi economic planners adopted the same solution in preparation for Hitler's wars of global conquest. These efforts culminated in the widely publicized "metal donation of the German people" for Hitler's birthday celebration of April 1940. Though the French press touted these metal requisitions as examples of both German economic weakness and Nazi brutality, the German method of "mobilizing metal" from 1914 to 1940 soon became the template for French military planners. At the outbreak of the Second World War, the French armaments minister reorganized the acquisition and distribution of raw materials in France in a manner that resembled Germany's economic structures in the 1930s. The public face of this economic imitation was a voluntary scrap metal salvage drive





that ended only with the German invasion in May 1940. The qualified admiration that many French officials felt towards the systematic organization of the German economy was legitimized with the collapse of France. To ensure a supply of raw materials, Vichy "technocrats" eagerly embraced the model of the German raw materials office with its combination of voluntary donations, economic incentives, coercion, and systematic organization. Thus, from 1941 to 1944, it was French metal inspectors—not Germans—who requisitioned nickel kitchenware, bronze statues, pewter counter tops, and copper distilleries.





## PARTICIPANTS Fate of Nations, Natural Resources and Historical Development

Name	Affiliation	Email
Colleen Dunlavy	University of Wisconsin	cdunlavy@wisc.edu
Rod Alence	University of the Witwaterstrand	Rod.Alence@wits.ac.za
Patricia Clavin	Jesus College, University of Oxford	Patricia.Clavin@Jesus.ox.ac.uk
Hanne Hagtvedt Vik	University of Oslo	h.h.vik@iakh.uio.no
Richard Toye	University of Exeter	R.Toye@exeter.ac.uk
Neil Forbes	Coventry University	lsx143@coventry.ac.uk
Tetsuji Okazaki	Tokyo University	okazaki@e.u-tokyo.ac.jp
Guia Migani	François Rabelais University	migani_guia@yahoo.fr
Eivind Thomassen	University of Oslo	eithom@hotmail.com
Teresa da Silva Lopes	University of York	teresa.lopes@york.ac.uk
Niklas Jensen-Eriksen	University of Helsinki	niklas.jensen-
TVIRIAS JOHSCH-LITRSCH		eriksen@helsinki.fi
Ann-Kristin Bergquist	Umeå University	ann-kristin.bergquist@umu.se
Joan Maria Thomàs	Universitat Rovira i Virgili	joanmaria.thomas@urv.cat
Chad Denton	Yonsei University	drcdenton@gmail.com
Gregory Ferguson Cradler	Max Planck Institute	ferguson.cradler@zoho.com
Elina Kuorelahti	University of Helsinki	elina.kuorelahti@helsinki.fi
Marta Musso	European University Institute	Marta.Musso@EUI.eu
Knut Ola Naastad Strøm	University of Gothenburg	knut.ola.naastad.strom@gu.se
Sabine Luning	University of Leiden	SLuning@FSW.leidenuniv.nl
Roy Macleod	University of Sydney	roy.macleod@sydney.edu.au
Einar Lie	University of Oslo	einar.lie@iakh.uio.no
Jonas Gjersø	University of Oslo	jonas.gjersoe@gmail.com





Mary Cox	Brasenose College, University of Oxford	mary.cox@bnc.ox.ac.uk
Camilla Brautaset	University of Bergen	Camilla.Brautaset@uib.no
Pål Sandvik Thonstad	NTNU	paal.sandvik@ntnu.no
Mohammad Izadi	independent researcher	momme.izadi@gmail.com
Francisco Beltran Tapia	University of Cambridge	fjb38@cam.ac.uk
Mats Ingulstad	NTNU	mats.ingulstad@ntnu.no
Hans Otto Frøland	NTNU	hans.otto.froland@ntnu.no
Jonas Scherner	NTNU	jonas.scherner@ntnu.no
Espen Storli	NTNU	espen.storli@ntnu.no
Marten Boon	NTNU	marten.boon@ntnu.no
Hanna Vikstroem	Royal Institute of Technology, Stockholm	hanna.vikstrom@abe.kth.se
Paivi Lujala	NTNU	Paivi.Lujala@svt.ntnu.no
Tirza Meyer	NTNU	tirza.meyer@ntnu.no
Elisabeth Piller	NTNU	elisabeth.piller@ntnu.no
Andreas Sanders Dugstad	European University Institute/NTNU	andreas.dugstad@gmail.com
Ingeborg Guldal	NTNU	ingeborg.guldal@ntnu.no
Nikolai Hassel	master student NTNU	nikolaihassel@gmail.com
Truls Knai	master student NTNU	trulsknai@gmail.com
Marius Ruska Nymoen	master student NTNU	manymoen@gmail.com
Kristian Skjellaug	master student NTNU	kristianskjell@gmail.com
Stian Paulen	master student NTNU	stian.paulen@gmail.com
Terje Grytbak Wold	master student NTNU	terjegry@stud.ntnu.no
Cecilie Thorp Hortemo	master student NTNU	ceciltho@stud.ntnu.no
Rolf Einar Vikanes	master student NTNU	revikanes@gmail.com
John Kwadwo Osei-Tutu	NTNU	john.kwadwo.osei- tutu@ntnu.no





Jon Olav Hove NTNU jon.olav.hove@ntnu.no

Daniel Beat Müller NTNU daniel.mueller@ntnu.no

Maren Lundhaug NTNU maren.c.lundhaug@ntnu.no

Mark Uwe Simoni NTNU mark.u.simoni@ntnu.no

Gwendolyn Claire Lin NTNU gwendolyn.lin@ntnu.no

Kristian Steines NTNU kristian.steinnes@ntnu.no

Julia Erol NTNU/University of Heidelberg julia.erol@ntnu.no

Bjørn Lien Bakke NTNU bjornlienbakke@gmail.com

Former Minister of Petroleum and

Ola Borten Moe Energy

Karl Erik Haug Royal Norwegian Airforce Academy

Karl.Haug@lksk.mil.no



