

The Climate Show episode 19

[zhen_sun_1.mp3](#)

Transcript

00:00:04 Linnéa Nordlander

Hi and welcome to the Climate Show, a podcast that explores the law and politics of climate change.

00:00:09 Linnéa Nordlander

This podcast is brought to you by the University of Copenhagen.

00:00:16 Beatriz Martinez

Hi. We are Beatriz Martinez, Linnea Nordlander and Alessandro Monti and we are your hosts at the climate show.

00:00:23 Linnéa Nordlander

Today we're talking about the regulation of Arctic shipping and the context of climate change. Arctic shipping is becoming ever more important due to global warming and rising temperatures. New shipping routes are opening up in the Arctic. These routes are much shorter than traditional shipping routes, and so have the potential to save the shipping industry both time and money.

00:00:43 Beatriz Martinez

However, there is an issue here, as these ships also heavily pollute the Arctic due to the fuels they use.

00:00:49 Beatriz Martinez

A robust legal framework regulating Arctic shipping is therefore necessary to limit the climate.

00:00:55 Beatriz Martinez

Impacts.

00:00:57 Beatriz Martinez

The regulation of shipping induced climate change in the Arctic is a research topic. We are very interested here at the Faculty of Law. We have a team of three researchers working on a project funded by the Carlsberg Foundation called Interact: International lawmaking actors in shipping and climate change. In today's episode, one of these three researchers, Stella Ebbersmeyer, is interviewing.

00:01:17 Beatriz Martinez

Shipping regulation expert Doctor Zhen Sun from the World Maritime University.

00:01:23 Beatriz Martinez

So hop on board and enjoy.

00:01:24 Beatriz Martinez

The show.

00:01:30 Stella Ebbersmeyer

Hello everyone. We are here today with Doctor Zhen Sun who is an associate professor of Ocean sustainability governance and management at the WSU Sasakawa Global Ocean Institute at the World Maritime University in Malmö, Sweden.

00:01:47 Stella Ebbersmeyer

Her main research interests include the law of the Sea, the international regulation of shipping, gender equality, notion, governance, climate actions and the protection of the marine environment.

00:01:57 Stella Ebbersmeyer

Hi, Zhen, welcome to the climate show and thank you so much for taking the time and for coming to Copenhagen from the other side of the bridge from Malmö.

00:02:04 Zhen Sun

Thank you for having me. It's pleasure to come here.

00:02:07 Stella Ebbersmeyer

So today we're delving into the very topical issue of Arctic shipping and its climate change implications. And this is actually a research agenda.

00:02:17 Stella Ebbersmeyer

We are very interested in here at the Faculty of Law. We actually have a whole team of researchers working on a project funded by the Carlsberg Foundation called Interact International law, making actors and shipping and climate.

00:02:31 Stella Ebbersmeyer

And I'm a researcher in that project where I'm working specifically on the topic of Arctic shipping and climate change, which is also the topic of today's episode. So to start off with and for those that aren't familiar with this topic, Jen, could you briefly explain to our audience how the topics of climate change and Arctic?

00:02:50 Stella Ebbersmeyer

Keeping are interconnected.

00:02:53 Zhen Sun

Well, I would first start climate change have generally speaking has a significant impact in the Arctic region and for the Arctic region, I think we need to consider both the natural environment, landscape, the ocean as well as its habitats, because compared to the Antarctic.

00:03:13 Zhen Sun

Which is another frozen part of the Earth.

00:03:15 Zhen Sun

We actually have inhabitants there, so the Arctic region has over 4 million residents in that area, so whatever happens is not only have impact on the natural environment as well as the human well-being for it. So now look at.

00:03:35 Zhen Sun

Climate change, probably in general terms, is that the Arctic actually kind of reacts to climate change impact way more significant than the rest of the world. So the temperature rises at three times at the global average.

00:03:50 Zhen Sun

And also that changes the ecosystem, the climate, the local ecosystem, as well as the climate, the global climate system, global shipping in general, International shipping has overall impact, contributing to the climate change. Arctic shipping specifically is because it's local or close to the Arctic.

00:04:12 Zhen Sun

It would have a more obvious impact. So if we want to focus on sort of the immediate interactions between climate change and Arctic shipping, we will be discussing the type of fuel that is used.

00:04:29 Zhen Sun

As the statistics goes, roughly speaking, we have almost like 80% of ships using a type of fuel called heavy fuel. It's a general term that describes probably one of the dirtiest fossil fuel oil that is used in the marine industry and in the Arctic. Also this is a.

00:04:48 Zhen Sun

Statistics that are generally speaking over 75% of the marine fuel used in the Arctic are the type of heavy fuel oil. So the possibility of using this type of fuel are several elements. If I want to start, I would say perhaps the 1st to start.

00:05:07 Zhen Sun

The severeness or the temperature has a different impact on the engine that operates heavy fuel oil in general, so that might cause additional hazard to the engine, the fuel system. So that means we need a specific type of management as well as equipment to be able to use this.

00:05:26 Zhen Sun

Ship all these few in the Arctic.

00:05:30 Zhen Sun

That might cause more failure than the other types of fuel used in the Arctic. So heavy fuel oil is quite highly concentrated in Sulphur fuel. So the burning of heavy fuel oil is a pollutant to the air atmosphere, so in that it has probably a few different.

00:05:49 Zhen Sun

Implications to the environment, as well as to human health.

00:05:54 Zhen Sun

One of that is contribution to the climate change. It warms up the atmosphere, has different SO₂NO₂ that contribute towards air pollution, astral diseases. I think I'm repeating myself now, but I think the scientists are only just starting to learning what is the real impact of this heavy fuel oil.

00:06:13 Zhen Sun

Even though this has been existing for centuries, the last or the other aspect of the use is that.

00:06:23 Zhen Sun

In case of a spillover or accident, we also need to discuss about the potential cleanup cost because of its remoteness and its harness from the marine environment, it takes way more effort to clean up. We don't have enough equipment.

00:06:43 Zhen Sun

Human resources in that area, so the cleanup will take much longer, if ever at all. And the residents of this pollutant in the Arctic.

00:06:54 Zhen Sun

It probably will cause an irreversible impact on the natural environment, not to mention the human health to it. Now coming to another, I think this is probably evident in, you know, the 1989 oil spill in Alaska. I think it's the Exxon.

00:07:14 Zhen Sun

Can't remember that name, but the other aspect of the burning of fuel is the emission of black carbon. Black Carbon is one of the black material. If you think of burning from.

00:07:26 Zhen Sun

Gas diesel engine that all this busting of fossil fuels so it considers a particular significant portion of the particular matter also known as PM, which is also air pollutant that contribute to air pollution as well as harms to human health.

00:07:46 Zhen Sun

Because the factor of the black carbon is its airborne, so it can travel quite long distance before it actually can drop on the surface when it travels around the airborne surface, the distance it actually absorbs heat from the air, so it warms up the atmosphere around it.

00:08:06 Zhen Sun

Once it drops on the surface, it will block it. Either it's land or ocean or the sea, especially on snow. So it's kind of reduced the reflection from the air and that contributes to the global warming in the Arctic much faster, so I think.

00:08:23 Zhen Sun

If we think about these kind of connections through the local impact from global shipping is way more obvious than the global shipping in general. So that's probably why we have been discussing a particular set of rules for the Arctic regulation in that region.

00:08:41 Stella Ebbersmeyer

Thank you very much for this very clear explanation on the topic of heavy fuel oil, climate change, Arctic shipping and specifically on the climate impacts that black carbon emissions can have on the local as well as on the global climate. So to continue from here, when it comes to the regulation of Arctic shipping, what do you think are the relevant legal regimes?

00:09:01 Stella Ebbesmeyer

To look at here and how do you think they actually regulate black carbon emissions from Arctic shipping right now?

00:09:08 Zhen Sun

So I think I would talk about it from 2 aspects. The law of the sea and the International Maritime Organization regulations, we look at UNCLOS as the Umbrella Convention or the overarching framework that regulates all activities at sea. So on what UNCLOS does for international shipping regulation.

00:09:28 Zhen Sun

Is that it attributes the jurisdiction among flag, coastal and port states.

00:09:32 Zhen Sun

It according to where the ship it is functioning. So UNCLOS brought in international regulation rules and regulation as a minimum standard for all state to be able to implement. But as the flag states, they have the option to go higher regulations for their ships flying their flag.

00:09:53 Zhen Sun

So on class is the one that set up the general framework to see which state can do what, but on classes supplemented or the detailed rules and regulations has been incorporated in the law of system by a rule of reference, when it refers to.

00:10:10 Zhen Sun

To the competent international organization as well as the generally accepted international rules and regulations. So both of those refer to the work that undertaken by the International Maritime Organization. So IMO has in the past developed all regulations relating to shipping safety.

00:10:31 Zhen Sun

Environmental regulation security. That's a new element to the IMO's work. So I think IMO the Marpol, the Marine Pollution Convention and also the newly adopted the Mandatory Polar Code would be those two most relevant regulations and if we think about the specific regulation on black carbon, I think this is actually currently I think it's being on discussing for over.

00:11:02 Zhen Sun

Probably a decade or two, but not necessarily have any binding regulations. Specifically looking at the impact of black carbon, it has been regulated by the use of kind of contributed by.

00:11:15 Zhen Sun

Regulation of sulphur fuel emission, as well as the use of heavy fuel oil in the Arctic, but in generally the international regulation, does not have a specific requirement on black carbon or which kind of fuel that is used for international shipping.

00:11:33 Stella Ebbesmeyer

Yes, and that's very true. So thank you very much for giving this overview. Perhaps following up on what you just mentioned, namely the heavy fuel oil ban that was recently adopted at the.

00:11:44 Stella Ebbesmeyer

And that was, of course, by some seen as an achievement in moving forward and the regulation on this topic. But it has also been criticized a lot for having several weaknesses. So just from your point of view and do you think that this ban has now closed the regulatory gap on this topic or do you think they could, there are things that could still be?

00:12:04 Stella Ebbesmeyer

Improved.

00:12:05 Zhen Sun

And I think those two statements are not exclusive to one another. It is major achievement and it is a long battle fight. But I think I'm probably more of the view. It is the first step of a long journey. We still have a lot of work to do, if I may point out that the heavy fuel oil ban.

00:12:25 Zhen Sun

It has quite a few limitations from the beginning. The ban is on the use and carriage for use as fuel of heavy fuel oil. For example, if we look at the 2010 ban in Antarctica, which is a carriage in bulk as cargo or carriage and use of fuel.

00:12:44 Zhen Sun

As of heavy fuel oil, so it left out a significant portion of the carriage of that cargo part. Now this is need to understand that in the context of this habitat environment for the indigenous people and the newcomers and the locators. So when we designed this ban.

00:13:05 Zhen Sun

And there was kind of.

00:13:07 Zhen Sun

Push back or requirement to say that you have to consider the local use of heavy fuel oil, so that was deliberately left out. There is going to be some follow up to do in that region. So that's on the specific ban for considering kind of giving the local possibility of local use on land. There's also exceptions.

00:13:29 Zhen Sun

And also for the option to delayed entering into force. If we think about the lifespan or the time frame that has been developed this when it was.

00:13:40 Zhen Sun

Upgrade it. The binding on the use will only be effective from first July 2024, even though the amendment came into force last year, so they have the maturation of the parties that to the to the Convention to MARPOL. That is the coastal state of the Arctic they could.

00:14:00 Zhen Sun

Temporarily waive this regulation, which is until 2029.

00:14:05 Zhen Sun

So that's almost a decade span before it can actually regulate anything. If this waiver has been used, that means perhaps there was one study done in 2021 that argues that there's 3/4 of heavy fuel oil fueled fleet in Arctic still will be in operation. So eventually we're speaking.

00:14:25 Zhen Sun

About a minimum of numbers that have been regulated, there is also the possibility of state to opt out from the regulation.

00:14:35 Zhen Sun

So far we have seen three options, even though they are small in number, but they kind of cover quite a majority part of the uses because that was from Russia, Canada, Finland and for Canada, Finland seems quite positive. Both remain committed to implement compliance.

00:14:54 Zhen Sun

With this regulation, but Russia was blank at the moment, I think they probably will have other considerations in the long run, but I think in terms of effectiveness of this heavy fuel oil ban.

00:15:08 Zhen Sun

And it's still takes a long way to come. We have to see how it is implemented and how many ships are actually complying to it.

00:15:17

Yeah.

00:15:18 Stella Ebbersmeyer

I think you're completely right and thank you so much for giving these insights and explanations on the heavy fuel ban and moving on. I'd also like to ask you something on your recent work on your recent academic work. So you recently published a book chapter on unconventional lawmaking at the IMO.

00:15:35 Stella Ebbersmeyer

And as you know this interact project and my research my PhD research project also focuses on law making and specifically on the role that actors and non state actors can play in the regulation of Arctic shipping. So in that connection I'd like to ask you in how far do you think that non state actors for example industry or NGO's?

00:15:54 Stella Ebbersmeyer

Or indigenous peoples can play a role in the regulation of Arctic shipping.

00:15:59 Zhen Sun

I think we need to first look at who are the main drivers for designing regulations of Arctic shipping.

00:16:07 Zhen Sun

So the technical rules standards sort of regularly updated in light of technology development. Those are mainly driven by the industry. Market demand and which is kind of capitalist talking. You follow where money goes and regulation will follow public awareness.

00:16:28 Zhen Sun

What do you have support that kind of puts pressure on the political view for state to comment?

00:16:34 Zhen Sun

And we have to meet international law. Has this kind of gap or need a bridge of the central state of rule of State, so state remains the right-holder, the obligation carrier. It has to any international regulation has to be implemented through this rule of state for the rest of the actors.

00:16:56 Zhen Sun

They need to interact with state, but I think in terms of shipping this has been a key feature of the development of regulations.

00:17:05 Zhen Sun

Shipping industry historically has been dominating the market, dominating the rules we have seen over and over again. Industry rules standard actually exist way before regulation. Sometimes when IMO developed even now develop certain technical rules, they actually go back to the industry.

00:17:24 Zhen Sun

Ask for their input and also confirmation. So in general we first need the shipping industry that covers all the actors that you mentioned because we have classification society, we have all the other ratification important non-state players in this field.

00:17:42 Zhen Sun

So we have to have their support for making that happen in terms of Arctic shipping in this element, I think so far NGOs also played a major role because their campaign, because they are providing this scientific knowledge, supporting decisionmakers and also had a wave of generating.

00:18:02 Zhen Sun

Enough public awareness and pushing these actors to sort of.

00:18:07 Zhen Sun

Move and so I think for this is also a key element in developing this. indigenous people, I think Arctic Council is a key forum in and act any affair that happens in that. So indigenous people has secured a permanent representation at that forum.

00:18:28 Zhen Sun

Now, IMO and Arctic Council are observers to one another's work, and the main Arctic, the 8 Arctic coastal states, are also main players in terms of driving, IMO, regulations, especially the European part.

00:18:43 Zhen Sun

And so I think their role in again it will be coming from their interaction with the main stakeholders, which is the state government and their voice. I think if we take a positive role to say that we can see that their voice has been heard, but we can also see the other side which is.

00:19:03 Zhen Sun

Their voice has been heard, but not necessarily been reflected into this regulation process.

00:19:08 Zhen Sun

Yes. So I think it's moving forward. It will be a collective effort from all these non state actors that to be interacting with states that to be able to move forward with Arctic shipping regulations.

00:19:23 Stella Ebbesmeyer

Yes, I definitely think so as well. And thank you also for mentioning the topic of industry standards.

00:19:29 Stella Ebbesmeyer

Generals, which of course, when it comes to the regulation of shipping in general, has been quite vital.

00:19:34 Stella Ebbesmeyer

So now my last question is it relates to something that you already mentioned, namely the Arctic Council. So how do you actually see the regulation of black carbon emissions from Arctic shipping developing in the future? Do you think that we are in need of a mandatory and strict regulatory instrument, for example from the IMO or do you think this is something that could be much better?

00:19:54 Stella Ebbesmeyer

Chief through more regional and informal yeah levels such as, for example, through the Arctic Council.

00:20:01 Zhen Sun

I think generally speaking, when it comes to emission of black carbon is a determinantal fact is which type of fuel and which type of engine that we're using for Arctic shipping?

00:20:12 Zhen Sun

In general, we are moving towards cleaner fuel, so even if we don't have a specific regulation on black carbon emission, it will sort of have a positive impact because of the

regulation of decarbonization of different air pollution control measures that adopted by the IMO. So moving forward, we will see.

00:20:32 Zhen Sun

Slowly might be a long process to see the reduction of black carbon emission in the Arctic.

00:20:40 Zhen Sun

There have been, as you know, that's the ongoing work at IMO they have this special working group and that's set up in 10 some years ago. But moving very slowly.

00:20:50 Zhen Sun

They are still discussing what are what are the possible kind of Arctic region that could impact have this kind of impact on from the black carbon emissions. So this is a very slow movement at time if we're talking about.

00:21:08 Zhen Sun

Monetary regulatory from a regulation from the IMO and I actually personally in favor of monetary regulation and I think for example, we can think about the designation of emission control area which has specific.

00:21:29 Zhen Sun

Regulation applying to a certain region that is identified as agreed with IMO members, Arctic Council, all the actors involved that is ongoing discussion and whether they will consider that is another thing. So essentially I think we are talking about a regional measure versus international regulation.

00:21:50 Zhen Sun

Uh.

00:21:51 Zhen Sun

I think local matters has its own benefits which can move faster. As you mentioned, if it's non regulatory, if it can push from internally and in discussion with the main actors that has its own benefits. But.

00:22:07 Zhen Sun

Arctic Shipping is also used, or the actors that's involved in this part also involves other flag states.

00:22:15 Zhen Sun

And possibly from both ends of the Arctic Road. So if you want to get their involvement, you have the buy in and the legitimacy process would be a certificate from the IMO. So I think personally I would, even though it's a long process, it's something that we move together.

00:22:36 Zhen Sun

To reach not just by one or two kind of, because as flag state you can already take more advanced measures to regulate this, but we currently the thing that is currently lacking is a political view.

00:22:52 Zhen Sun

Any change in the shipping industry is a multi billion dollar question and who pays the bill will eventually answer where the regulation is going.

00:23:01 Stella Ebbersmeyer

Yeah, very, very good point. Thank you so much for pointing out the benefits and drawbacks of both approaches. And so I guess we just have to see what happens. And yeah, that remains to be seen. Is there anything else that you would like to mention today before we part?

00:23:18 Zhen Sun

Well, I think I have considered two other things that when in terms of the Arctic shipping regulations, the 1st is that we seem this is probably quite common in developing shipping regulation is it's kind of piecemeal exercise. We deal with different pollutants.

00:23:36 Zhen Sun

As they arise.

00:23:40 Zhen Sun

I have argued and also will support is we would need to take a holistic approach to regulate all the shipping matters and they have designed this type and one of the alternatives in changing fuel and all the others is the.

00:23:57 Zhen Sun

Use of scrubbers.

00:24:00 Zhen Sun

And.

00:24:01 Zhen Sun

For the Arctic specifically, if they were allowed to use in the Arctic, that means you are actually transforming a type of pollutant to another, and this is clearly forbidden under UNCLOS, which is you have obligation not to transfer from one type to another, not to transmit one region to another. So when we design.

00:24:21 Zhen Sun

Regulations of shipping. We need to take this holistic approach IMO has been criticized by many scholars and the environmental activist to say that you're always responsive is not taking kind of precautionary approach or to take initiatives.

00:24:38 Zhen Sun

To prevent these matters from arising, but rather dealing with it when it comes.

00:24:46 Zhen Sun

And that's the first point. The second one I want to highlight is perhaps the rule of port state that in terms of enforcement, because whatever regulations that is being designed, its effectiveness is depending on its implementation and enforcement.

00:25:04 Zhen Sun

If we rely.

00:25:05 Zhen Sun

Solely on FlexIt we have already seen the downside of that, and so I have argued that for both sides of the end of the Arctic Road. at least from.

00:25:18 Zhen Sun

The no sincere root site we have quite clear.

00:25:22 Zhen Sun

Port State control matters from Paris as well as Tokyo MOU on Port state control matters. If we can get this to, they have been discussing the coordinating the standard of checking.

00:25:37 Zhen Sun

Certificates as well as verifying the compliance status of it. So this is another thing that I think is quite important is to have a backup.

00:25:47 Zhen Sun

To fulfill the flexit implementation to ensure that the ships transiting through Arctic are actually complying with the regulations. So those are the second the two thoughts that I want to add on to today's questions.

00:25:59 Stella Ebbersmeyer

Perfect. Thank you so much. And yes, you're completely right.

00:26:03 Stella Ebbersmeyer

And never neglect the role of port states. And also it's very important to remember that we should never turn a climate problem into an environmental problem at the end. So, it's very good to keep that in mind. So yes, thank you so much for today's interview. It has been a tremendous pleasure to have you here and we are very much looking forward to continuing our conversation on this.

00:26:23 Stella Ebbersmeyer

And hopefully seeing you back in Copenhagen soon.

00:26:26 Zhen Sun

Thank you very much. I really enjoyed the discussion today. Thank you for the time and for the invitation.

00:26:31 Zhen Sun

Happy to be here.

00:26:33 Stella Ebbersmeyer

We hope you enjoyed this episode of the Climate Show.

00:26:36 Stella Ebbersmeyer

Stay tuned for more.

00:26:46 Beatriz Martinez

Thank you for listening to this episode of the Climate Show. If you are interested in learning more about the regulation of our big shipping and climate change, check out the work of Doctor Samsung and her colleagues at the World Maritime University, Sasakawa Global Institute.

00:27:00 Beatriz Martinez

You can find the link to the Institute and.

00:27:02 Beatriz Martinez

To our InterAct Project in the show notes. Stay tuned for our next episode.