

## PODCAST TRANSCRIPT

A Sustainable Energy Future for Africa

Episode title: Are universal energy access and fighting climate change compatible goals?

Guests: Laura Cozzi and Carol Mungo

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Christine Juta:	<p>Welcome to a sustainable energy future for Africa. A podcast series offered by the African School of regulation (ASR). The ASR aims to be a center of excellence for independent discussions and knowledge exchange. Our purpose is to improve the quality of African energy regulation and policy. This podcast will bring together energy experts and emerging energy leaders to discuss current topics of interest for the energy sector on the African continent over multiple episodes. The first season of the podcast focuses on energy access, the major immediate challenge faced by the energy sector of many countries in Africa, we explore whether universal energy access by 2030 is possible in Africa. My name is Christine Juta, your host in this series of podcasts, I am a clean energy professional with a strong commitment to advancing universal energy access towards sustainable economic growth in Africa.</p> <p>The topic for today's discussion is an interesting one, given the power sector's contribution to carbon emissions, are universal energy access and fighting climate change compatible goals. I'm joined by Laura Cozzi who is part of the International Energy Agency senior management team and was appointed the agency's Chief Energy Modeler in 2018. As Chief Energy Modeler Ms Cozzi oversees the agency's work on outlooks and forecasts, Ms Cozzi's responsibility includes the World Energy Outlook, the IEA is flagship publication. Laura, thank you for joining us, and welcome to the show.</p>
Laura Cozzi:	Thank you very much, Christine, for having me and having the IEA in the show. Thank you.
Christine Juta:	Okay, so my first question for you is that the Clean Energy Transition is a global phenomenon. What are its objectives? And do these address the challenges faced by the African energy sector?
Laura Cozzi:	Thank you, Christine. I think this is an incredibly, incredibly topical question. In fact, I think that I'm not sure we can really say that there is a global energy transition, every country wants to achieve affordable, secure, and clean energy for the people. And what we are seeing is that we are witnessing a rather incredible convergence of several things at the same time. First of all, we are witnessing a cost reduction for very important clean energy technologies. Those include solar, batteries, and heat pumps and the like. At the same time, you're seeing an increasing number of countries putting in place very strong policies to push the clean energy transition. And finally, we are seeing very high fossil fuel

	<p>prices for a number of reasons. So those three things together, for us marked 2022 as a record year for clean energy, globally. Maybe, let me give you a couple of numbers here, which are important to set the scene we have seen in 2022. Solar addition, globally growing by 40%, this is an incredible, incredible global record over the span of just three years from 2020 to 2023. The sales of electric vehicles globally, have gone from just 4%. And our expectation this year is that nearly one car in five, globally sold is going to be electric. Similarly, we're seeing heat pumps being sold globally at record low, high level and nuclear coming back with a lot of interest. So ranging from the inflation reduction act in the United States to Repower EU in the fitful 55 package in the European Union, the green transformation in Japan, huge push in China, India, in Indonesia, for clean energy, we are expecting to see clean energy investment, rising to over 2 trillion in 2030. And this is this is great news. Now, having said this is important to understand what's happening in Africa at the same time. What we are seeing in Africa is an incredible thirst of investment in energy, including clean energy. For me, there is a quite shocking number out there, which is the following. Today in Africa, we invest around 3% of global energy investment 3%. But Africa you know better than me is home to 18% of the global population. So, there is an incredible imbalance in the amount of investment that is flowing into African countries in energy in general, and in clean energy in particular, that is making the continent suffering from not having enough access to energy for people, for communities, but also for the industry to thrive. So, this is an absolute priority that has to be tackled at a global level for Africa, and its population to thrive going forward.</p>
Christine Juta:	<p>Thank you for that very insightful submission, Laura. And I think you have just touched on what feeds into my next question for you, you really have articulated the major challenge facing the African continent, which is that there is “a thirst for investment in the energy sector”, as you put it, and the figures are not looking good, 3% of global investment in energy against a significant global population, and also a population that has significant people without access to energy. So, having said that, is a clean energy transition compatible with accelerating energy access in Africa? Or are these competing objectives?</p>
Laura Cozzi:	<p>So let me be very clear. For me, the answer is obvious here. The two objectives are completely, completely aligned. Now, let me explain and articulate why we have started tracking here at the International Energy Agency back in the year 2000, how many people country by country do not have access to electricity, to not have access to clean cooking? When I started working here at the IEA, it was around that time. And the chief economist back then, which is the current Executive Director of the IEA was asking, we were preparing something about the emerging world and the importance of the emerging world, and in particular Africa and in energy, and he said, can you please put at the very outset, how many</p>

people don't have access to electricity, and we were started looking at this number, and this number was not there. So back then there was an incredible problem, which is not completely solved today, there is lack of information for global policymakers about the African energy sector and about access. So we are making globally huge progress on this. But information and putting clean information in front of policymakers is critical. So if I go back to data, back in 2000, there were over 500 million people in Africa not having access to electricity.

And unfortunately, year after year, after year, after year, we were tracking these numbers, these numbers was growing, growing, growing, growing. And we were putting this number as much as we could, in the frontline of the world energy outlook which is released every year, reminding the world that we were going into a very unsustainable trend, then 2013, 2014 for the first time, we actually see a peak in the number of people not having accessing in Africa, and we went back trying to understand why is this happening? And so we were looking at 610 million people in 2013 not having access to the electricity in Africa and then what we looked okay there were certain countries that are just seeing huge progress happening, there is Kenya, Ethiopia, Ghana, a number of countries that are really pushing into the resources, having a very, very clear government plan to achieve full electrification, putting a regulatory framework very important for the school, right regulatory framework to start attracting investment in a combination of grid and off grid solution. And what we see is that those countries that are doing well, we have a number of countries that are doing well in Africa. This largely happened thanks to renewables. Why? Very simple. You have incredible resources of hydro, one of the best in the worlds and the best resources in the world for solar 60% of the best solar resources are located in the African continent. Now, this is great news. But then we looked at other numbers. And we look at how much solar is currently installed in Africa. And I could not believe this number. The number is that solar installed in Africa today, population of over 1 billion people is the same as the Netherlands. So there is a huge, huge inequality that needs to be fixed, because Africa does have the resources has the best potential, what we need to unlock is investments. So this for me shows that our analysis shows very clearly that the cheapest way to get to full access in African countries is utilizing the resources that Africa has. And the largest resources that Africa has in many cases are renewable. So is hydro is solar, some cases wind, it's a combination of extending the grid. So those investments need to go in the lead, first and foremost, and then for about half of that is going to be connections that are going to be off grid. But this is not in contradiction with the clean energy transition and goes very much hand in hand, I want to spend a couple of words now on clean cooking, which is not very much talked about, but it should be, as it is, is happening, some of very, very important communities that are in rural areas where women children, spend hours, we have seen many of

	<p>those data, data points nowadays, a couple of hours a day where you go and fetch for your fuel wood, and then you start cooking in many cases, of course, with the severe impact for health and breathing, but also, quite frankly, for the fact that women could use this time in a different ways to get into the society. Now, what's happening about clean cooking, is that those countries are thinking about India, thinking about Indonesia, which had a similar situation that many African countries are living today where biomass and other forms of, of cooking where fuels and technologies were the most prominent one, managed to achieve a more sustainable solution went for LPG, liquid liquefied petroleum gas. And absolutely this Africa should use the same type of trajectory. In many cases, we hear that a lot of funders have some difficulties actually going down this route. Because, among other things, LPG, of course, is a fossil fuel resource, and is considered not good for the climate. But here, we need to really understand what we're talking about. First of all, the emissions from LPG are minimal. But it's also important to put into context that the emissions coming from cutting forest, using fuel would an important even burning biomass emitting methane when you consider all of this. It does also have positive greenhouse gas benefits, even if you're using fossil fuels. Also, I would say all in all, first of all, we should look at the right lenses for Africa here is about people. But also looking at economic competitiveness. And in many, many cases for Africa. It means that actually getting to accelerating energy access and the Clean Energy Transition objectives really do go hand in hand.</p>
Christine Juta:	<p>Thank you for that. You've touched on a very interesting subject. I know you mentioned LPG within the context of clean cooking. I'm curious to know, in your view, what is the role of gas in Africa's energy transition broadly?</p>
Laura Cozzi	<p>Thank you, Christine, for raising this because I think it is an equally hugely important topic that we've touched upon very, very clearly, in our focus on Africa outlook that we released. Last year, our executive director had the pleasure to discuss with several African leaders at the African Union, now it has become one of the hottest topic probably in global energy debate. And the reason is the following that many European countries started looking at Africa as a source of new gas to replace Russian gas. Now, when we look again at the situation in Africa, today, there are, around 5000 billion cubic meters of unproduced gas fields in Africa. And today, Africa accounts for around and has accounted over the past many years, just three per percent of global greenhouse gas emissions, which honestly is nothing. And increasingly I think you can you can vouch and I am pretty sure you will have many other colleagues from Africa explaining that today, despite the continent being the one with the least emissions, globally, is the one that is suffering the most from already the very visible impacts on of climate change, ranging from</p>

	<p>tremendous heat waves that have very, very bad impact on agriculture and food security. So 3% of emissions to date, the responsibility of Africa to global climate change, let's go back to gas, if Africa was able to attract all the investment needed to produce all these amount of gas resources that are there that have been found, these 3% would go to less than 3.5%. So this is not a new issue that has relevant implication globally on climate is about development for Africa. And while we completely agree, and I just said this earlier, that renewables in many cases will be the cheapest source, they will account for 60% of capacity additions in the future in terms of electricity generation, but Africa to thrive doesn't only need an electricity they will need, you will need fuel to build cement, the cities of the future population is growing tremendous is the youngest population in the world. There is a need for cement, the need for fertilizers, absolutely critically important going forward as climate change is not going to be stopped tomorrow. To make food resilient, fertilizers are key. And gas is critical to produce fertilizer. So gas, fuel security for Africa is going to be handled and super important. Third, hugely important issue for Africa to discuss is going to be water and water desalination. Many countries will be needing to desalinate water to ensure a very, very basic need, which is access to clean water for the population and natural gas is going to be part of this of the solution. So in our analysis, natural gas is part of the Africa energy matrix, and to those who fear that development of natural gas in Africa is in contradiction to the global addressing the global climate change solution. Let's please remember the data 3.3% going to 3.5%. So this has been our very clear analysis that we've been putting forward last year and will continue to remain valid.</p>
Christine Juta:	<p>Very interesting submissions you make Laura, I think one of the key points you have emphasized in our discussion is that Africa does have vast resource potential from hydro resource to wind and solar as well. What are the bottlenecks and roadblocks that must be reduced to accelerate progress in electricity access? Since as you mentioned, there is limited investment in energy in Africa.</p>
Laura Cozzi:	<p>I would like to go back to what I said at the beginning, there is a thirst for investment and the global community needs to come together to make sure that those investments flow in Africa in particular for us to achieve full access, the African continent needs 25 billion US dollars per year. Now, people that may listen to this podcast may not know how much is 25 billion US dollar a year. This is tiny, it is nothing for the global energy sector. This investment corresponds to a large LNG project, one large liquefied natural gas project, nowadays complex, in advanced economies, to be brought to completion is around 25 billion a year. So, we are saying that what we need for Africa as a whole to resolve electricity access and clean cooking a very, very basic need, we would need to attract investment every year that equate a large LNG project. Is</p>

	<p>it doable? Of course, it is. So what do we need to do? There are two key issues for us. The first is the cost of capital. Unfortunately, since COVID, we are seeing that cost of capital, especially for clean energy, investments in Africa is going up. We are paying people that are interested in making investment in in accessing clean energy in energy in general, are faced with a very, very high cost of capital base points that are several times higher than the ones in, in advanced economies. And those clearly make the project more costly, make the electricity less affordable, and deter some of the very critical investments that are needed. So there is going to be a very important summit here in Paris that President Macron is hosting on financing, we are working to make sure that the cost of capital for Africa is discussed heads on because this is the first roadblock to take care of the second is about what Africa needs is investments from the private sector. So there is going to be and there is very limited money, government money that comes with no strings attached. So there is a need to rethink how concessional finance works, because we need to multiply this very small amount of money that will come throughout climate funds, through all types of funds that will, will come into play in the transition. So we will continue to be working to put to the global leaders attention these numbers. So for example, we have a cost of capital observatory on our website. And I invite all of you that are working in energy, that are interested in regulation to use it and bring forward to the leaders and say that this is just not right, we need to work to decline this cost of capital and think about how to make concessional finance work in the best way possible.</p>
Christine Juta:	<p>Thank you very much, Laura, this has been a very interesting discussion, you raise so many, so many interesting points. We could continue this discussion longer. But I really thank you so much for taking time to answer these questions. This is pertinent issue, an important one, especially for Africa. And as you said, that overall climate change objectives and the clean energy transition for Africa are compatible goals, and they do complement each other. So the future is not bleak. Thank you so much for your time.</p>
Laura Cozzi:	<p>Thank you very much, Christina. And good luck with this very important podcast series and all the work that Africa School of regulation is doing. Thank you.</p>
Christine Juta:	<p>Thank you. Our second guests for this episode is Carol Mungo, a research fellow at the Energy and Climate Change Program at Stockholm Environment Institute Africa. Carol has experience working on environmental sustainability, climate change and sustainable energy in Kenya and Tanzania. Carol, thank you for joining us, and welcome to the show.</p>
Carol Mungo:	<p>Thank you very much, Christine. And good afternoon from Nairobi.</p>

Christine Juta:	My question for you, Carol is a very interesting one. Given the apparent tension between the pursuit of energy access and fighting climate change. Can Africa close the Energy Access gap while fighting climate change?
Carol Mungo:	<p>Thank you, Christine. And thank you very much for having me in this podcast. So indeed, it is an interesting question. And it's contentious and it's a what would you call it the tension that comes around these two important thematic issues or areas of the region? The fact that you're raising this question the fact that this is causing tension or contention or debates in very many spaces, it means that it is indeed an important discussion to have. It means indeed, that there is something that is being done that is heading to a direction that world's attention in how exactly are we pursuing these two very important and integral goals in the continent? What I would say is that I would give a very good optimistic view that Africa can indeed close the Energy Access gap while fighting climate change. The reason is that there are two very distinct goals energy SDGs goal number 7 and SDG goal number 13 are what we call complementing goals as is so many of the 17 SDGs that we have. The fact that these two are distinctly complementing is that in the continent as we see, a large population still has a unreliable access to electricity and also not modern energy services. Energy poverty is a reality with the current statistics talking about 600 million people without electric access to electricity and another 700 million without access to clean cooking. So, these statistics show or represent almost half of the population in Africa struggling are pursuing or intending to see how exactly to move to the next stage of the energy ladder. So, for this reason, you'll find that it is very important for us to see exactly how is the continent developing and how are we going considering we have very vast opportunities within the region to expand and to grow and to see exactly what is the economic trajectory of the continent is.</p> <p>How do we develop complementary sectors using or pairing renewable energy sources? How do we ensure the manufacturing sector in the country or in the different countries are being powered or complemented by renewables which are in abundant in the continent? Another second pattern we can look at this, is how do we promote energy efficiency in the continent? Energy efficiency is a second opportunity that we can look at energy efficient efficiency in the building sector in the transport sector, you find a lot of buildings in the continent, even in retrofitting or the construction of new buildings. And this is an opportunity again to see how do we ensure that they build the buildings are as energy efficient as possible, how do we ensure retrofitting also is done in a manner that is going to reduce the use of electricity, water and all the other components of the building that will foster efficiency. So, this is also another avenue that we can look at. And this is an avenue</p>

that looks at all angles from the finance side, the technology side the capacity side of the people and they take in the capacity of guide again of the very building that we are looking at itself. Secondly, also we are looking at how the transport sector from the infrastructure sector to the technology sector, how can the transport sector continuing to develop or continue to advance in a manner that is factoring in is factoring in climate resilient, nuclear or low emission trajectories, for example, is something that we all are very relatable with the transport the public transport system in many parts of Africa still needs areas that still can improve, we still can do better, we have very energy efficient vehicles, we have uncovered worth of vehicles on the road due to the emissions that they produce the particulate matter that comes into the air when you when you're stuck in traffic in any country in Africa you can almost experience this. So how then can we identify ways to improve our infrastructure that we reduce the number of individual vehicle roads on the road. How to have more collective pooling system for instance, and efficient train powered by renewable sources? How can we replace or how can we identify where the opportunity for immobility is coming into the continent. As we are seeing this is a discussion going in right now, different tasks different companies are introducing different kinds of technologies, for instance, the two wheelers, the three-wheelers. So, the transport sector is already showing a lot of promise in terms of happening in different mobility solutions. However, this directly this directly connects to mitigating or reducing the global emissions that was as you can see in the transport sector, while at the same side saying how we can improve energy access, and the transport sector and talk about immobility is dependent on a reliable grid and reliable electricity. So this links back to the conversation the discussion that we had at the very beginning, how can we ensure that we have reliable access to electricity, then this also shows the opportunity that the continent has, we have an opportunity to improve our access to electricity, we have opportunity to see how we can ensure reliability of this electricity and this the ripple effect of this is going to really directly influence or complement with the climate change sector is looking at in the transport sector broadly from the infrastructure to the technology that we are seeing. Lastly, what we can also mention is Stockholm Environment Institute, we recently completed a study on an integrated assessment of air pollution and climate change for sustainable development in Africa.

I would highly recommend this report, it covers the whole continent and identifies the different goals and targets and how to achieve this from the 25 sectors that will be there about 37 sectors that were identified and discussed in depth later in the report. 35 of these sectors were adopted by the Africa Ministerial conference and environment. And one of them as we can talk about here is the cooking sector. Also they mentioned and how can you ensure the particulate matter that has actually been produced from the cooking sector can be reduced, and it can be reduced through adopting more than cleaner technologies and

	<p>fuels. And there's a lot of studies, a lot of research that has been done and the advancement of the sector now into electric cooking, how can electric cooking fit into the discussion around reliable grid electricity, reliable, clean energy access. So these are just examples, but examples that show the most complimentary ways that we can approach this, and importantly, is our policy and regulatory framework, it is very important to align this. This way important policies that we have in the continent to ensure that it does not trigger it does not pause, or it does not encourage the conversation of competition or tension between the two sectors, as you can find in and just this is just an example, you'll find a country which has a policy or development plan that entails increasing electricity reliability through cogeneration, for instance, and the NDC plan, or the climate change policy is strongly talking about cutting emissions by 30%, or X percent. So if you find these two policies, and the target is by 2030, by 2050, of these two distinct plans that are really important to the policy direction of the country, this is where the tension lies. And this is where competition lies. And so it's very important to have the policy and regulatory framework aligned, the policy and regulatory frameworks really basing the foundation of what the future looks like what the current looks like, what are we intended to do as a policy intervention for this country? That it's reflecting on both them climate goals and energy access issues? And seeing how it's complementing each other and in a way that the complementary efforts have also looks at how to attract financing? How can you be able to attract financing in a way that you can power it can encourage both sectors to advance? So yes, there is an opportunity, the fact that you're talking about it is a very good opportunity. And I do believe that by the time we get into the 2030 review of the goals, we'll be able to see how the sector has developed how the other two digits have advanced. And we'll be able to gather a lot of experiences from this in terms of redefining exactly what are we looking at when discussing energy access and fighting climate change. And Africa is where the solutions lie in Africa is where the opportunities line, because we are at the right place and at the right time to really see how best we can advance. So thank you very much.</p>
Christine Juta:	<p>Thank you very much, Carol, for that very comprehensive and optimistic note on this topic. I'd like to thank our guests, Laura Cozzi and Carol Mungo for their time and insightful contributions. In today's thought-provoking episode, we delved into a captivating topic that explores the relationship between universal energy access and the fight against climate change. Africa's energy access gap and the power sector's significant contribution to carbon emissions, led to discussion on the compatibility of these goals, and why they must be pursued simultaneously. With each objective supporting and enhancing the other we can create a more sustainable, resilient and prosperous future for the</p>

	<p>African continent. I hope our listeners enjoyed this episode of a sustainable energy future for Africa. If you'd like to listen to more episodes, or find out more about the African School of regulation, visit <a href="http://African School of regulation.org">African School of regulation.org</a></p>
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