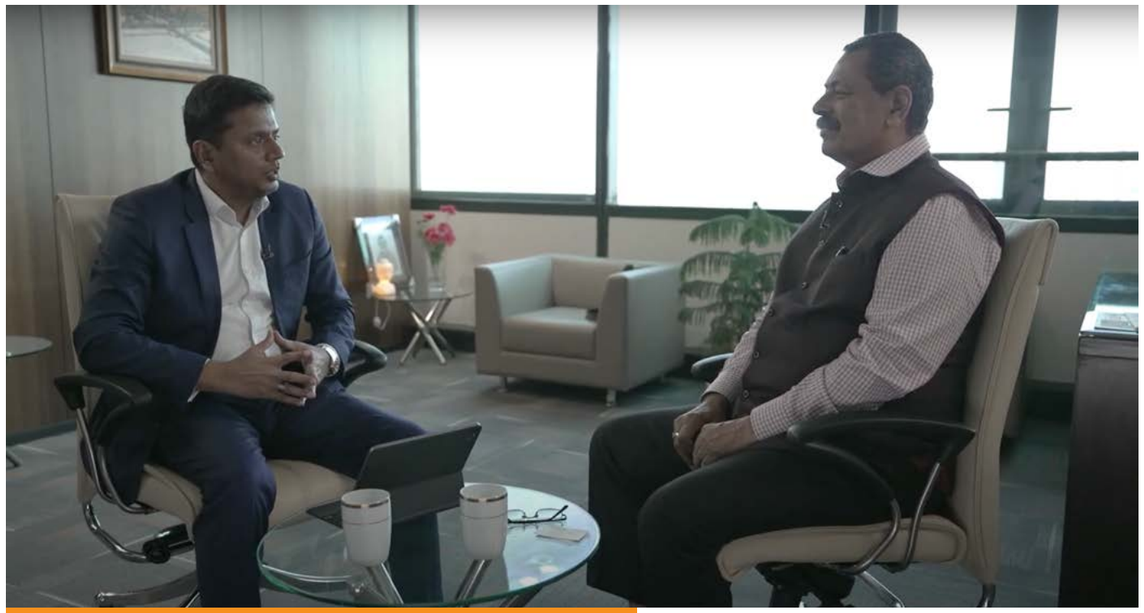
‘All our campuses are zero consumption zones, everything is recycled’

A three-pronged approach – which includes reducing consumption, encouraging use of alternative fuels, and proactively preparing for the future – can drive climate change adaptation and resilience efforts in the country, emphasises **Subramanian Sarma**, Whole-time Director and Senior Executive Vice President (Energy) at Larsen & Toubro (L&T) in a conversation with PwC India’s ESG Leader, **Sambitosh Mohapatra**.



Sambitosh Mohapatra (left); Subramanian Sarma (right)

Excerpts from the interview

Sambitosh Mohapatra:
Welcome to this edition of Immersive Outlook. Today, we have the pleasure of having with us Mr Subramanian Sarma, Whole-time Director and Senior Executive Vice President (Energy) at Larsen & Toubro. A graduate in chemical engineering, he holds a Masters from IIT Mumbai. Mr Sarma has more than four decades of experience, out of which three decades were in the Middle East. He is a subject matter expert on oil and gas value chain and leads hydrocarbon power and green development. Welcome, Mr Sarma. We expect to hear a lot about what L&T is doing for itself and for its clients in the Indian market.

Subramanian Sarma:
Thank you, Sambitosh. Thank you for having me here today.

Sambitosh Mohapatra:
So, to start with, we have been hearing about climate adaptation and climate resilience a lot over the last two decades. But action, it seems, has started just now. How do you see the ecosystem around climate adaptation and resilience developing in our country?

Subramanian Sarma:
I think that since the Paris Accord, which was signed by most of the countries, the countries have held regular meetings about climate change and that has increased awareness. The first step in any movement or any change is awareness – people accepting that there is a problem. I think we have reached that stage. Everyone understands that global warming is now inevitable unless we do something drastic about reducing the carbon footprint and reducing the CO2 emissions. So, I think India is very much part of it and India has done quite a bit after signing the Paris Accord. I see this as a three-pronged approach for our country. India is a developing economy where we have to strike the right balance between affordability, security and clean energy. India has done quite well in moving forward on many of the initiatives. It is a three-pronged approach.

The first, and most important, is the reduction in the consumption of energy per unit of gross domestic product (GDP). That means achieving more with less consumption and that is happening. And how one does that is by improving the efficiency of consumption, use better machines like we recently did. We used a fertiliser plant which is energy efficient, and is far superior to the existing fertiliser plants, with a 40% improvement. Similarly, if you see now there is a huge campaign about using LED lamps. LED lamps consume 40% less energy than normal lamps. I think these are very good steps, which we, as a country, are driving to reduce consumption.

Similarly, decongestion of traffic as the infrastructure develops for travel efficiency and to improve fuel consumption, de-urbanisation, adding more airports, all this is part of creating a space to reduce consumption. I think quite a lot is happening on that front. That is the first approach.

The second approach is how do you find alternative, less carbon-intensive energies? And in that, I think, again, India has made good progress because it has been trying to move from an oil- to gas-based economy. Today, in the Indian economy, gas has a 6% contribution in the energy mix, and you may want to take it up to 12% or 15% because for every calorific value or for every heating input, gas emits 40% less carbon than oil.

So shifting the fuel from oil to gas can reduce the carbon footprint. India has also added a huge amount of solar energy which is growing and there is a plan to take it up to 500 gigawatts, which is quite substantial. Biofuels are also being pushed very hard.

Blending of biofuel in petrol and diesel up to 20% has been mandated by the government. Now if you can find good technology to convert staple agricultural waste into 2G ethanol, that will also contribute a lot to decarbonisation. So that is the second approach.

Third, how do you prepare the country for the future? People are talking about one degree, two degrees temperature rise which is now almost a given. I mean, we cannot get it below that. This is going to have collateral damage in terms of rising water levels and climate change. So, how do you prepare the country? I mean, India is vulnerable in many ways because it has coasts on three sides. We have to get ready for that so that we do not get caught by surprise. How do you build the infrastructure to prevent any natural disasters from hitting us badly? Those actions have to be taken. We also need to prepare for more afforestation, tree plantation, etc. So it is a three-pronged approach – reduction through better efficiency, alternative fuels, and preparing for the future, and I think India is working on all of those fronts.

Sambitosh Mohapatra:

Well said, Mr Sarma, because at a country level, the policies and regulations are quite supportive of what you are saying. Specifically coming to L&T, you are in the construction space and we understand that the building ecosystem contributes a lot to emissions, isn't it? Similarly, climate has an impact on buildings. So it goes both ways. So what is the specific thing that you do when you are designing, planning and executing projects? How are you utilising technology, for example, to mitigate some of these impacts?

Subramanian Sarma:

Very good point. Actually, the infrastructure business, particularly when it is getting implemented in very remote places, it is actually a hard business in terms of abatement. I mean, to reduce carbon footprint in this business is not that easy. However, I think L&T has been at the forefront of building the energy infrastructure, and we are quite committed to reducing carbon footprint. We have made a commitment that we will be carbon neutral by 2040. Our effort is more or less similar to what I talked about at the national level, you know, how do I improve efficiency, how do I reduce consumption? We are using a good design mix where less water or less aggregate is used in concrete, so we get the same strength by using less. We are looking at how to use higher efficiency diesel engines and diesel machines so that fuel consumption is reduced. Similarly, in every site and every location, wherever solar power can be used as an alternative fuel, we are installing and using it.

More importantly, we are using digital technology in a big way to improve the overall efficiency of our operations. We are using the internet of things (IoT) based technology – every equipment, every construction equipment has an intelligent chip – and we are measuring their performance, their utilisation and how effectively they are being used. That helps us to bring up the overall efficiency and reduce wastage. When it comes to buildings, we have come up with some good designs which focus on longevity because if you design for 40 years, instead of 25 years, then in a way you are reducing carbon footprint because you do not have to rebuild those buildings. So longevity has been incorporated in design. Then this building you are sitting in, it is a green building. It is certified as a green building in terms of air conditioning and water usage. All our campuses are zero consumption, everything is recycled. So there are many efforts.

Having said that, I would say that the remoteness of our projects and accessibility issues which we face given that we are working in the extreme corners of the world, including the Middle East, it is not easy for us to implement everything that we want to in all the projects. But we are making our best efforts. I mean, there is no doubt about that.

Sambitosh Mohapatra:

So I will pick up two strands from what you are saying. The first is that I want to hear more about the people aspect, because in many of the places – you yourself have spent three decades in the Middle East – how do you deal with these extreme weather conditions, which are going to be more aggravated? Are working hours getting changed? What are the facilities you give to people? Tell us about some of this because you have dealt with labour and people from underprivileged backgrounds who one should be worried about.

Subramanian Sarma:

Again, it is a very interesting point you brought up. Things are changing because of climate change due to which the availability of skilled workforce is becoming a challenge. And for us, I think as an organisation, we have been extremely sensitive to how we treat our people and what kind of welfare facilities we provide, because for us not just as a good, caring organisation, but even otherwise from a business point of view, it is very important that people are well looked after, only then you can get good productivity, safety and quality – all of them are interrelated.

Wherever possible, we provide a controlled environment and we also have shelters for the workforce. During summer, it is a common practice in the Middle East that the peak hours are silent hours from 10:30am to 4:00pm when you do not work and you start early in the morning or late evening. Similarly, in India, we do this wherever possible.

I think the most important thing is how do we reduce the intensity of labour? We have come up with some very good modular solutions in everything we do, like precast for concrete and precast buildings. I mean even for the trans-ocean bridge we built, a huge amount of prefabricated steel was used. You develop it in a controlled environment and then take it and install. We are trying to reduce worker intensity in harsh conditions in this way.

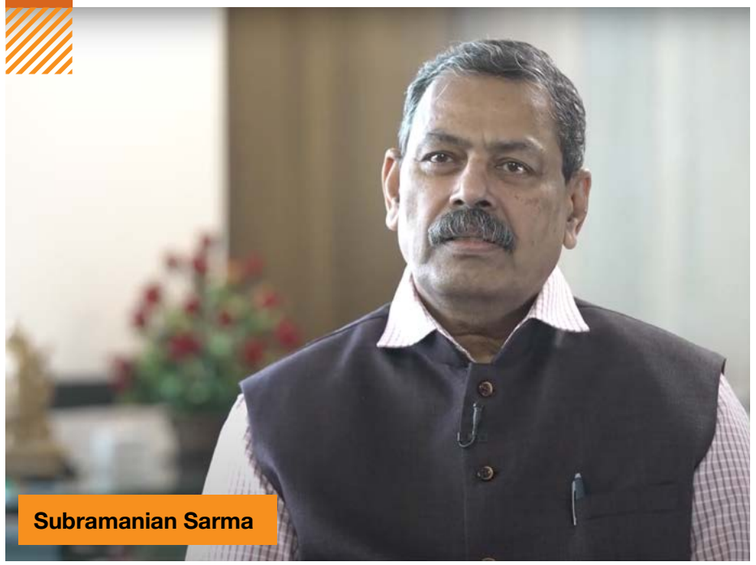
Sambitosh Mohapatra:

And the second thing that I wanted to ask was about the market response. As you are trying to go for green buildings, is it cost competitive? First of all, is it more expensive? And second, is there a wave where we believe that the clients are asking for it now? Are they willing to pay more for a green building, for a more technologically or digitally, or what do I say, responsive building?

Subramanian Sarma:

There are two ways of looking at it. One is capital costs and operating costs. Our industry very commonly uses the life cycle cost analysis. So you not only look at the capital, but you look at the overall net present value (NPV) using 15, 20 or 30 years of lifecycle and what is the operating cost. A classic example is electric vehicles (EVs) versus internal combustion (IC) engine vehicles. Today, EVs are more expensive but when you look at the consumption of petrol and diesel over five years, the payback period is very, very short. So the same concept applies to green building also that maybe it is a bit more expensive to build it – though that expense is also coming down – but definitely there is a huge advantage in operating costs.

Second is that now, at least in urban areas, people are becoming more responsible and they would like to have green buildings. They also want to make their contribution to reducing the carbon footprint. So there is a preference for that. If there is a premium to be paid, I think people will be willing to pay because these are all long-term assets. The cost impact is very small.


Subramanian Sarma

Sambitosh Mohapatra:

Sure. And over the last two, three years, have you looked at your products and services portfolio to address some of the emerging climate adaptation or resilience measures that you want to work with your clients on? Is that something that you would want to share with us?

Subramanian Sarma:

Oh, yes. L&T has been at the forefront of building the energy infrastructure in India and the Middle East. We traditionally started with oil and gas upstream then moved to midstream, downstream and then we had a huge role to play in thermal power plants. And now, of course, with the new technologies coming and availability of clean energy options, we have positioned ourselves well. So, in addition to our conventional capability in oil, gas and power, we have also started undertaking work in the green space, which is basically green hydrogen, green ammonia, blue ammonia, and carbon capture projects. So in that segment we have our conventional engineering, procurement and construction (EPC) offering.

In addition to that, we have also gone into green manufacturing. We have a strong presence in manufacturing, and now we are going to green manufacturing, in the sense, looking at the value chain components in the green value chain, for example, an electrolyser. We produced our first electrolyser in December last year and we are planning to expand on that and be a big supplier of the electrolyser, which is the essential component for green hydrogen. We will add more components, more products in that value chain. More importantly, we have taken on a developmental role. We have formed a joint venture with some major players and together we are looking at building assets for generating green hydrogen, blue ammonia, green ammonia, for both domestic as well as export markets.

Sambitosh Mohapatra:

So given the large scale challenge of adaptation, how are you engaging with the broader stakeholder ecosystem? For example, while in your operations you can be green, but what about your suppliers? How are they coming together? How many suppliers do you have?

Subramanian Sarma:

I don't know, maybe more than 2,000 or something like that. It's a large number for sure. Good things have to start at home first. You have to lead from the front. Initially we are trying to do that, our customers are doing that. It's a process and it has begun. You can't expect all the suppliers to come on board immediately. There are many who are voluntarily coming, some we need to nudge and make them aware of how important it is. Slowly, the entire bandwagon will come onboard. It is a process and it will take time, but it is happening.

Sambitosh Mohapatra

Sambitosh Mohapatra:

So typically the journey is that we put in place a code of conduct, then we do some checks and then we invest. Is there a plan to co-invest along with your suppliers on certain technologies?

Subramanian Sarma:

I think you have to share the knowledge and work together. Vendor development and supplier development have always been part of our value system and ecosystem so wherever we can share the knowledge or share the technology, we will help them. Co-investment has to be on a selective basis. Of course, we do not have unlimited resources to invest with everyone. But we will definitely co-invest, if required, in select areas. I think the whole process, once it begins, will become a necessity, it will not be a choice because at the end of the day, I mean, the community and the society will start judging you. Like today, if something is available in disposable bags, which are organic, I mean, you have an affinity for that, right? You want to reduce the use of plastic and fossil fuels. So I think over a period of time, as awareness increases, I think, everything will get naturally aligned.

Sambitosh Mohapatra:

You yourself have committed to increasing use of renewable power in your sites by 50% by 2026 and 100% in your operations by 2035 and then be net zero by 2040. Anything in which you want the government regulators or the ecosystem to support you? Or any challenges that you have faced?

Subramanian Sarma:

I think it is a challenging process because you are trying to strike a balance, as I said, between cost competitiveness, affordability and also being clean. These three aspects have to be aligned and they are conflicting. I mean, today, the cost of doing something clean or environmentally friendly is more expensive than not doing it, right? But at the same time, we have to remain competitive. The customer should be willing to pay more for it. The whole process is evolving.

The government has put some very good enabling policies in terms of production-linked incentive (PLI) schemes, they are also giving priority – in terms of land allocation – to green development. I mean, there is also talk about having some enabling policies on the demand creation side. It is not in place yet, but there is a lot of thought going into it and we can see that there is a serious commitment. So once the policies come in and momentum picks up, then I think, people will be willing to pay a premium and people may even stipulate that we want only green and we will not be able to accept a higher carbon footprint.

Sambitosh Mohapatra:

The last bit, because we talked about people, we talked about technology, the processes, awareness, regulations. Any reflections on financing, in the sense that are you getting financing for these green projects?

Subramanian Sarma:

I think from everything that I gather from within the industry and the people I speak to, financing by itself is not a problem. I mean, particularly for green, there is a lot of financing you can access. It is having the right solution, the right technology, and the right commitment. Once you have a good plan, you should be able to attract finance. I think that will not be a bottleneck.

Sambitosh Mohapatra:

Thanks, Mr Sarma for your insights into climate adaptation, what the countries should be doing, what L&T is doing, and what the broader ecosystem is responding to. Thanks a lot.

Subramanian Sarma:

My pleasure. I enjoyed this conversation.

Subramanian Sarma (left); Sambitosh Mohapatra (right)