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| **Interviewer name** | INTERVIEWER |
| **Sub-contractor organisation** | ARU |
| **Interview date** | XXXX |
| **Duration of interview audio recording** | 1 hour 37 minutes 15 seconds |
| **Face-to-face or virtual interview** | Virtual |
| **Interview participant** | |
| **Code** | I14 |
| **Participant name** | RESPONDENT |
| **Organisation name** | **XXXX.** |
| **Gender** | Female |
| **Stakeholder category** | Architect working on energy planning and modelling of buildings energy management systems |
| **Country** | India |

**Introduction**

**INTERVIEWER** 00:11

Good morning XXXX, Good afternoon.

**RESPONDENT** 00:15

Good Afternoon XXXX.

**INTERVIEWER** 00:17

Hi. And I'm really appreciative of your time and participating in our study that aims to obtain a better understanding of energy access and gender equity within energy access in India and in the Global South.

**Consent**

So, before we start, I would like to check that you have completed and returned the consent form. Have you completed and returned the consent form?

**RESPONDENT** 00:44

Yes, I have.

**INTERVIEWER** 00:47

Through this interview, we would request you to share your experience and expertise as someone working in the energy sector, as well as your views and opinions on gender equity in energy access. So is it okay if we record the interview for our documentation purposes?

**RESPONDENT** 01:04

Absolutely.

**INTERVIEWER** 01:06

The recorded interview will be transcribed for analysis and the copy of the transcript will be shared with you for your approval. All the information we obtain serves the sole purpose of this study, and will be seen only by the research team. Your name and any other identifying features will not be used anywhere in reports and other publications emerging from the study. And the interview will take more or less one, one hour. Is that clear? Do you have any questions?

**RESPONDENT** 01:35

No XXXX... No questions.

**Part 1:**

**INTERVIEWER** 01:37

Okay, so I'll proceed with the formal part of the interview. And can you start briefly by telling me a bit about your current role and position and the organization you work for?

**RESPONDENT** 01:51

Right. So I am an architect. And I've done my masters in building simulation and energy efficiency in buildings. About 20, roughly 20 years ago, I started this organization, our current organization called XXXX. We started off in... well, I did my Masters in the US and came back to India in 2002, and immediately founded this organization. We started off working on green building certification projects. One of our first projects was the XXXX, XXXX. So that's how we started, there was a lot of interest in energy efficiency. Our firm actually coincided with this growing interest. And so we grew to... we grew to include a lot of policy related projects in our portfolio. So I can say that, broadly, we, we work on two aspects of building energy efficiency, one is the on ground work where we are ensuring that, you know, energy efficiency, excuse me, measures are being implemented on site and in the building. On the other hand, we work with XXXX, with the XXXX, and then so, like I was saying that these two, you know, broad categories to our work. One is design assistance and providing on site assistance to buildings and the other is you know, building energy efficiency policies and codes and related stuff....

**INTERVIEWER** 05:05

What could you elaborate a little bit on the specific energy related activities that your organization and that you do?

**RESPONDENT** 05:12

`Sure. So if you take the first aspect of our work, which is the XXXXX

**INTERVIEWER** 07:55

Okay. What kind of buildings, are they? I mean, what kind of activities, functions in these buildings?

**RESPONDENT** 08:07

Right, so, these are mostly large corporate buildings, but, you know, we have also worked on smaller residences and farmhouses. But I would say 90% of our work is with, you know, large corporate houses. Yeah. And sometimes even builders and developers, especially the ones who are, you know, building housing. But it's it is an entire range.

**INTERVIEWER** 08:47

Right, right. So, within this work, to what extent do you think access to energy feature?

**RESPONDENT** 08:59

Yeah, that is a good question. So access to energy is, you know, that we have not encountered in the large, you know, corporate projects, but because they are in a different milieu, I would say, well, it's an urban setting, where you know, these questions do not arise, but there is the other aspect of our work, say for instance, where we are working on affordable housing or in a more you know, more rural setting. Yeah, access to energy has been an issue and where our evaluation was not driven by you know, lowering the energy use, which is what we are typically trying to optimize. So in these other set of projects, we were driven by maximizing thermal comfort, ensuring daylighting. And so our metrics, so to say a different for these, you know, these other set of projects where energy access was an issue. One other aspect. One other interesting project we're working on is, is popularizing or mainstreaming net zero energy buildings in India. It is a XXXX, which is an acronym, and

**INTERVIEWER** 10:45

called what?

**RESPONDENT** 10:47

XXXX, XXXX

**INTERVIEWER** 10:53

XXXX, right?

**RESPONDENT** 10:54

Yeah. So you can you can, you can access the program through our website. And so the XXXX program is trying to mainstream net zero energy buildings. So this is interesting, because here we are, you know, trying to work on buildings that generate their own energy. And through net metering, they're actually able to supply some of their surplus, you know, the, the surplus generated energy back to the grid. So if you, if you want to access it right now, you can just check it out. It's XXXX.

**INTERVIEWER** 11:51

Yeah, I'll check it out post our start talking. Yeah. So could you elaborate a little bit more on the energy access areas within your work?

**RESPONDENT** 12:06

So, I, you will have to tell me a little more about, you know, what you mean, by energy access,

**INTERVIEWER** 12:16

I mean, energy access means people being able to access energy for all their needs, I mean, whatever that need may be, within a certain setup, built environment, right? Whether they have the adequate access, whether everybody has the adequate access to, to do what they need to do.

**RESPONDENT** 12:40

Right. So, so yeah, so then, you know, in for a large portion of our projects, energy access is, is not an issue because, you know, the projects are situated in urban areas where, you know, the, the concern is the other way around, you know, the, the concern is to reduce the energy use of the building.

**INTERVIEWER** 13:14

Right.

**RESPONDENT** 13:16

But for, you know, for a smaller percentage of our projects, yeah, energy access, has been, you know, the driving factor for those projects. And so then, the XXXX...

**INTERVIEWER** 13:35

Could you tell me a little bit more about those projects?

**RESPONDENT** 13:40

Yeah, so we, we did one project where we were actually trying to, you know, secure a grant for an innovative, affordable housing technology. So, our role in that was to invite interest from other... I wouldn't say vendors, but innovators who... or entrepreneurs, who, in this... working in this field were where they were coming up with innovative technologies for building rural houses. And that's where I felt that, you know, their emphasis was on energy access, and, and, and on popularizing, you know, some off grid solutions where solar photovoltaics were used for providing energy access to the rural population.

**INTERVIEWER** 15:02

Right? Right. So, I would also like to, because that's actually the other side that we talk about, we talked about the, you know, the two different ways that we see energy consumption happen, where one group of people and you pointed that out already, like the urban corporate sector officers or anything like that, I mean, the effort becomes actually to reduce the energy consumption. So that's whereas the other side is where, on the other hand, there are a lot of people who actually cannot probably do a lot of things the way they would like to attain, you know, their maximum potential because of a paucity of energy. So there is a kind of differential access variability, right, between some groups, and the others, where some people have more than what they need. And it's almost like in in the energy sector, we talk about it as energy abuse, yeah, and the other people who are not getting energy for even their very basic needs, right. So, if you could, just from your experience, talk to me about this or any other differential access that you have seen within your work.

**RESPONDENT** 16:28

Yes, I want to thing that I have noted is that there is this differential, but there is also sort of a heightened awareness of this differential, I would say, over the last, you know, 20 years. So, when we first started working in this sector, you know, comfort was the driving factor of our decisions. So, there was no compromise on thermal comfort. And, and, and we, you know, ended up designing buildings for, you know, 22 degrees centigrade as the thermostat setpoint, which was a mindset that needed to change. Very gradually, we have seen that change come into even the corporate sector, where now, you know, sufficiency is the key word. Yeah. So, so, there are, and I think, it's, it's happened, it's happened because of a lot of factors. There's been research on, you know, act, being stationed where you are, you must be more aware of this, but there's been research on you know, thermal comfort standards for tropical countries.

**INTERVIEWER** 18:08

Absolutely, yeah.

**RESPONDENT** 18:10

So, which, which is, you know, absolutely different from, from those of, you know, temperate countries and unfortunately, this got lost in translation. So, we are now trying to go back to the initial, you know, thermal comfort standards that we had set for ourselves, and this is being driven scientifically with XXXX doing a very, in depth, very detailed research on what thermal comfort standards for Indian offices should be. And now, we are shifting from the, you know, the 22 degree...standard to 27 or even 28 degrees. And it's being informed by, you know, what is the typology of this building, as well, I mean, are you in a.. what kind of setting are you in? Is it possible to let the air in? is it possible to, you know, naturally ventilate the building, you know, a substantial number of hours of the day, is it possible to actually, you know, open your windows even if you're on the eighth or ninth floor, so, you know, are your windows operable what, what kind of materials you're incorporating in the building, what is the you know, what surfaces do you have, so, that you know, the mean radiant temperature of that surface can be controlled, you have thermal mass in the building. So, all these factors are now informing the building vocabulary, which is, you know, more unique to us more unique to our climate and our setting, which may not have been the case when, you know, we were aspirational in a different way, see 20 years ago. Right.

**INTERVIEWER** 20:26

So in that cooling thing only, you must be aware also about the difference of comfort level between men and women.

**RESPONDENT** 20:35

Yes.

**INTERVIEWER** 20:36

A lot of research regarding that, too. Yeah,

**RESPONDENT** 20:40

Finally we needed research to prove that...

**INTERVIEWER** 20:43

I know. But it used to be I mean, it used to be quite a standard thing for most of us women to complain. And we would always be carrying a shawl with us whenever we went anywhere, and then we realized that is because none of those internal cooling spaces were actually designed for us, we all ...we need two to three degrees higher, and that was never considered. So, do you see these kind of understandings, gendered understandings informing the discussion on thermal cooling or thermal comfort within, in fact, in the interiors of a building?

**RESPONDENT** 21:16

Yes, it Okay. Yes, I see that. And I see that I see this being discussed. And, you know, I would say, we can even pinpoint the starting point of this discussion, when I think New York Times published an article two or three years ago, and I remember, you know, the debates within our office, with our clients. And I wouldn't say that this has been formalized, or, you know, it's a discussion that comes up in the initial stages of the building thermal comfort design or the mechanical design, it does not yet, but it is I would say it's... I am happy, it's slow progress, but, but it's part of the conversation now. So I do see now, you know, more ad hoc solutions, where maybe, you know, a certain cubicle can be designated as the warmer zone, and, you know, so people flock there if they prefer warmer temperatures, so it's a very ad hoc solution. But at least there is a recognition and an acknowledgement that there is a difference. And it's not just

**INTERVIEWER** 22:50

But even, even if you are, like involved in the energy management solution for an office, which has, for example, primarily, women employees, like many IT offices have. Even over there, you don't really see this becoming a major factor in the discussion, it is still just a side note?

**RESPONDENT** 23:15

It is well... it's not a major factor in the sense that increasingly, you and especially the, you know, offices, like say Infosys or TCS, they increasingly have individual comfort controls. So things like airflow, even temperature, you know, these have individual controls for... in most of these offices, so it's kind of thrown that debate out so people can adjust the temperature, airflow according to their needs.

**INTERVIEWER** 24:03

But it's still all very mechanized solutions or are people also our corporate offices are starting to open up two passive solutions.

**RESPONDENT** 24:14

No, they are. Corporate houses are also opening up to passive solutions. They're no longer doing what was termed green washing where their decisions were driven by you know, the green building certification requirements. The green building certification requirements themselves have undergone and undergone a change because earlier, they were all driven by again, you know, the US Green Building Council standards, so we had the

24:59

The Green building sentence which was not...Indigenous

**INTERVIEWER** 25:03

XXXX again, it dropped.

**RESPONDENT** 25:05

I think I moved away. So should I repeat the last sentence?

**INTERVIEWER** 25:12

Yeah, this last couple of words.

**RESPONDENT** 25:14

Yeah. So at the, you know, the, the green building certification standards themselves have you know, adapted better to Indian standards. It all... the LEED rating system started in the early 2000s, in India. And that was completely driven by the US Green Building Council Standards. And now we have indigenous building benchmarks, which take better account of, you know, indigenous situations and conditions. So. So, yeah, that that entire benchmarking system itself has undergone a transformation. And so that's good news, because we are no longer you know, adhering to a set of standards that is not applicable to our climatic conditions.

**INTERVIEWER** 26:28

So, within your work what kind of... in relationship to the policy context shaping your work... What current issues or developments do you feel influence your work? Are there certain policy challenges? Are there certain policy issues, supportive parts of your policy, national or state level policies, talk a little bit about the policy climate of your of your work?

**RESPONDENT** 26:56

Yeah, so, I think the most significant policy related work that we have done is the updation of the original energy conservation building code. So, the energy conservation building code follows primarily a prescriptive method of constructing your building to for it to be energy efficient, which means that it prescribes a minimum energy performance level for your walls, for your roof, for your windows, for your mechanical systems, for your lighting systems. And so, this is the prescriptive method of meeting the code. And there is an a second more adaptive method, which is the whole building performance method, which means that you can feed you know, all these aspects, you know, the performance of your wall, window, roof, mechanical systems, lighting all into a computer model, and then make adjustments to the model as you wish. So, for instance, you can have a mechanical system that is much better performing, then what is prescribed in the code, but a window that is, you know, not up to the code. So, you can do trade offs between these two. So it's a more sort of flexible system of adhering to the code. So this code was updated in 2017. And we wrote the updated code. Now, again, in terms of, you know, what our prediction was, for how much you know, emissions that will reduce for our country, those numbers, I will send you later because I don't have it on my fingertips. Sure, but, but the issue that I wanted to highlight was that, by the code has been in existence for over, let's see, 13 to 14 years now. We've not seen an update that we were expecting initially. So there's, in the implementation part, clearly, you know, it's been lagging. So we have even made the code more stringent because it was due for the 10 year division, you know how technology completely overhauls itself in ten years. So we made the code more stringent, 10 years, but the fact of the matter is that, you know, the code that was designed 10 years, or actually more 13 or 14 years ago, even has not been implemented, to the extent that one would have liked.

**INTERVIEWER** 30:32

As a regulatory mechanism, you mean,

**RESPONDENT** 30:34

yes. Yes.

**INTERVIEWER** 30:36

Right.

**RESPONDENT** 30:36

So, so, so it's a it's a state subject. So, yeah, some states have adopted it, and the others haven’t. Some have made significant changes to it, which is good and adopted it. There are many others that have not notified it. And this is the status 13 to 14 years after the first set of code was written. So yeah, that is the one issue I wanted to highlight. But that is not to say, women...you know, what I've seen in the last 20 years, it does seem like everything has been amplified a lot. And I mean, I'm speaking very anecdotally, I don't have numbers with me, I can send you after this call if you want. But on the ground, we've not seen, you know, the code being notified, or being followed by most of the commercial buildings that come. So it is like an echo chamber in the sense that people are....

**INTERVIEWER** 32:02

On paper only and it's not become part of the mainstream practice.

**RESPONDENT** 32:07

Yes. Yes. not part of the mainstream practice and also people who are doing this to begin with... Yeah, you know, So it's, like a more like a niche kind of work. Yeah. Yeah. So like, more and more people are not coming under fold is what i mean. So, the Infosys and XXXX and TCS. And these people were anyway pioneers in making at least their facilities, very energy efficient. You know, practices like, you know, introducing alternative transportation for their staff, being mindful of the kind of food that is served to them, the, you know, the wellness, so to say, of the staff, so, and these are the people who've moved on to the next stage to the updated stage of the, of the code. So, so, yeah, it's, it's more like, you know, the ones who are already aware and already doing this are now doing this in a very intense way. But the fold has not increase.

**Part 2:**

**INTERVIEWER** 33:38

Right. So XXXX, you know, the Sustainable Development Goals seven very clearly connects the access to energy, and specifically access to electricity and access to clean cooking fuel as an essential component of development of a person, the rights of an individual has to his or her development to his or her full potential. So our that kind of comes from that from the point of view of everybody's right to an equitable energy access. So what do you personally.... What does equitable energy access mean?

**RESPONDENT** 34:30

Yeah, I mean, to me, it seems that we are very far away from it. Because, like I said, you know, the people we work with it, their concerns are completely different from say, what the concerns of 80% of the Indian population may be. So I feel that equitable access is not something that we are.... not something that we have been able to achieve at all. So there are, you know, people who have access to electricity and are wasteful of it, and do not even attach the importance that should be attached to it. And on the other hand, we have, I don't know, maybe billions of people who don't have access to even cooking gas.

**INTERVIEWER** 35:46

Even the basic energy required for water lifting, and also many Yes, don't have so many women actually spend hours of their lives just lifting water, because they don't have the

**RESPONDENT** 35:57

Energy to Yes, and definitely it It affects, you know, one gender, disproportionately....

**INTERVIEWER** 36:05

Because that was my next question that how do you see within the question of energy access? What How do you see gender equity? What does gender equity mean to you within energy access?

**RESPONDENT** 36:18

So yeah, I feel that this definitely, disproportionately affects women because at the end of the day, we are the ones who are expected to, you know, provide for the family, put the meal on the table, and water and food are just, you can't get more basic than that. So if, you know, one, gender is expected to arrange this and spends most of their productive time arranging for, you know, just the very basic needs of humans, then, at the very least, it's unfair. It's unfortunate, and it needs to change.

**INTERVIEWER** 37:18

And the best part of it best part is that this very basic need of food and water, you put it so rightly, that is also supposed to be done with almost no energy footprint. Because energy allocation is the tardiest when it comes to these two things.

**RESPONDENT** 37:37

Yeah, I mean, the unfairness of it is just so stark, that I don't, I don't think it even needs to be commented upon. Yeah. And I think it's, it's not that difficult to, to change it.

**INTERVIEWER** 37:57

So, within your work, how do you map demand for energy and consumer needs? How do you do the data collection or determination of needs... energy needs?

**RESPONDENT** 38:19

Well, I mean, through there, how do we do it as in how do we arrive at? Yeah, okay. For that, we, you know, originally depending.... depended on standard tools that, you know, there are benchmarks for all of these. But as you progress in, in one of....

**INTERVIEWER** 38:52

Could you elaborate on any of the major tools like data collection tools?

**RESPONDENT** 39:00

We do not collect data, per se, we use the standard tools, like for instance, for, you know, all kinds of heating, refrigeration, mechanical ventilation related aspects of a building, there is the ASHRAE standard, which is, you know, the ASHRAE Handbook of fundamentals, which it's like the equivalent of, say, the NEUFERTS, you know, the standard for architecture where all all the basic numbers across the world across climate types across, you know, whatever your categories are, it's all there. So, that is, I would say, a starting point. Other than that your practice keeps informing you numbers. The third method is that we have actually done projects where the purpose of the project was to collect data. So in those cases, we have used a market research team to.... So in in the case of projects where you know, data collection was key, we've used market research teams can be....

**INTERVIEWER** 40:46

yeah, I got the market research team. And after that, it kind of dropped.

**RESPONDENT** 40:49

Yeah. So they usually work out of tier one and tier two cities. Okay. So, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad. And so they you know, so we design the research for them for collection of the data, so you know, what kind of households we are targeting, or what kind of offices we are targeting, we work with them through a series of interviews, so we do 100s/ 500s, more than that interviews with the residence, this is what we have done in the past. And in the last five years, we've swXXXXhed to actually logging the data. So currently, we are doing a project with an organization called class, which works on energy efficient appliances, and we have set up these data loggers in about 200 households in the country, and so we are doing real time data monitoring for these households. So there are various ways in which we collect data, logging data through.... What kind of data is getting logged, if you could share? Yeah, so in the case of the data loggers, we are attracting cooling and heating energy. We are tracking home appliances, like washing machines, like kXXXXhen appliances, some households we've selected with electric vehicles to understand are much EVs are consuming. So on and so forth, but largely...

**INTERVIEWER** 43:04

Okay, and have you analyzed these kinds of data? I mean, in terms of like, who is using what is that what you what your purpose is? In terms of understanding? ....

**RESPONDENT** 43:16

Yeah. So our purpose is to understand, you know, the penetration of these appliances and to understand, you know, the socio economic conditions of people who use a certain kind of appliance and what the, how the energy use varies across cities, across economic groups.

**INTERVIEWER** 43:44

Wonderful. Very interesting. So in this, when you're saying about the, how it varies, how do you map the diversity within this data collection process? You talked about socio economic groups, right?

**RESPONDENT** 44:05

it's, it's very similar to how television companies it's very similar to how the television TRP rating is done. So each house is identified. And, and we have a dashboard. Okay, so each houses identified, you can access the dashboard for any house at any time and see their real time energy use. It's also logged every hour, every 15 minutes. So you have access to you know, all kinds of, you can use your interface or your dashboard to actually see the data in any form or….

**INTERVIEWER** 45:02

Right? And that how do you do the diversity mapping? Like, who's using... how much? I mean, there would be classifications or criteria? What do you what do you do?

**RESPONDENT** 45:11

Yeah, for that we did an initial survey with our client to see what kind of data they were interested in. And which, you know, demographic group they were interested in. And that's how we figured out the.... that's how we zeroed in on the 200 houses. Okay. And this, this is going to expand 1000... 200 we feel is not representative enough.

**INTERVIEWER** 45:47

This 200 is spread across these tier one and tier two cities that you were talking about....

**RESPONDENT** 45:52

Right, right... so it comes down to y'know, 10 or 15 houses per city...

**INTERVIEWER** 45:57

So you feel Of course, you need more, because there would be a lot of regional variations also, I'm sure.

**RESPONDENT** 46:03

Exactly, exactly each other because of the climate variation as well. Yeah.

**INTERVIEWER** 46:09

So you're also, but in this data collection, you're looking at the household has one unit?

**RESPONDENT** 46:15

Yes, yes.

**INTERVIEWER** 46:16

Okay. Okay. Is there a you are you asking from a gender perspective? I was just going to ask you that if there is if there is any gender mapping with energy usage that you are doing within your data collection?

**RESPONDENT** 46:33

No, unfortunately, no. We literally just have who habits the household? Yeah. Okay. Know how many women are in the house, but no, nothing beyond that.

**INTERVIEWER** 46:47

Okay. So it's still like looking at household as one unit, right?

**RESPONDENT** 46:51

Yes. Yes. Yes. Okay.

**INTERVIEWER** 46:53

So, but I mean, like, taking this discussion further, I would just like to probe your mind in terms of how equitable do you think energy access is at the house household level? In terms of gender? I

**RESPONDENT** 47:11

Well I think, in a country like ours, you know, it all, at the end of the day, depends on what demography you're talking about. So I feel that at the upper middle class, and the more well off group, I don't think there is any kind of equity issue in terms of energy access. But....But yeah, definitely in the other categories. There is.

**INTERVIEWER** 48:21

But within a household? Do you think men and women use energy in the same way? Or do they use energy in different ways?

**RESPONDENT** 48:35

Well, I think men and women use energy in different ways. in the same household as well. But I think this difference is more marked across households, then within the same household.... within the same household, the there is a difference, but I think it may be you know, the approach or the attitude is the same.

**INTERVIEWER** 49:16

Could you explain that with some example?

**RESPONDENT** 49:20

in the sense that you know, if the house... if it's an affluent household and, um, you know, the mindset of the dwellers, it's wasteful, then it usually runs across the, you know, all inhabitants of the house. Like, I don't see a difference between the, you know, the attitude of the man in the house and the woman in the house in the case of an affluent house. For that is wasteful and affluent household that is mindful or you know, sensitized to energy efficiency will is usually sensitized across genders.

**INTERVIEWER** 50:16

Right.

**RESPONDENT** 50:20

But, but not so affluent household where, you know, the energy bill or the, you know, the price you pay for energy use may be a significant portion of the income or at least perceived as a significant portion of the income... I think they're you know, other kinds of I mean, other equations may come into play where, you know, the position of the woman and the status may come into play.

**INTERVIEWER** 51:06

Okay.

**RESPONDENT** 51:08

Where one gender may try to you know, have control over the other in terms of end use of the household.

**INTERVIEWER** 51:21

Okay. In like, have you seen any specific examples of this?

**RESPONDENT** 51:30

Oh, not witnessed it, but just from the, you know, conversations I have with, you know, the help in my house, I can see that they are hesitant to say, purchase, let's say a mixer grinder, because it will add to the energy use or, or a decision like buying a refrigerator will, we will need to discuss it with their husband to get his permission.

**INTERVIEWER** 52:09

But what about what about any energy needs? The man has? Does he discuss that with his wife?

**RESPONDENT** 52:16

No, no, that's what I was implying that. I don't think that it's both ways. In the discussion, it's usually imposed by whoever is perceived as the stronger income. And it's not proportionate to the income because, you know, most of these, most of the women I'm talking about probably earn as much.

**INTERVIEWER** 52:48

Right? Because that, that this is you're talking about a maid. So obviously, she's having an income, which is a fairly reasonable amount of income in that category. Right. Yeah. But even that does not give her the voice to decide on what you're talking about. is an energy, like a labor saving device, used for the preparation of food in her family. It's not something which is for herself, right?

**RESPONDENT** 53:19

Yes. It adds to her convenience, it adds to her.

**INTERVIEWER** 53:24

Yeah.

**RESPONDENT** 53:25

You know, it's just more time for herself.

**INTERVIEWER** 53:29

Yeah. So even in the data collection that you were you were doing, you were talking about how you were you were logging, like the number of appliances and like washing machine and etc. So, in that also, do you see that kind of like, if you see, what would be the first electronic device to penetrate into a household if we go up the economic scale, you know, from the lowest most economic scale to going up? What have you witnessed would be the first electronic device to...

**RESPONDENT** 54:10

Yeah... television

**INTERVIEWER** 54:14

Yeah, right. Yeah.

**RESPONDENT** 54:16

Television followed by refrigerator. And, and now increasingly, we see air conditioners as well. But most of the houses we are logging already have all of these.

**INTERVIEWER** 54:36

Okay, okay. So, according to you, do you see different groups of women also benefit from access to energy differently? For example, does energy access or use differ from among, say, older women and younger women? income groups, obviously, we're talking about income groups, but other diversities Do you see, like, I don't know, regional community, ethnic groups, I don't know whether you've worked with any different ethnic groups like tribal groups or anything like that. But do you see any differential between one group of women and another? And if you see, what do you what is the background difference between these women groups?

**RESPONDENT** 55:21

I can tell you only... only anecdotally, because I have not professionally worked with women groups, you know, recognizing that as an aspect of my project....

**INTERVIEWER** 55:34

that's fine. That's fine.

**RESPONDENT** 55:36

But yeah, definitely working, you know, in Jharkhand and or, you know, with the, with the tribal population of Jharkhand, I found those women more empowered to decide for themselves. I have not gone back to analyze what the reason could be, again, this is not from a professional perspective at all, this is very anecdotal. But I found them more apt to you know, be able to decide about buying land or in refrigerator or scooter or any of these things... cycle. Many of them use cycles to commute to work, which are not seen in other parts of India, that much. So yeah, if I mean, that's one ethnic group that I have observed closely, and this is what I found that...

**INTERVIEWER** 56:49

amongst age groups, like older women to younger women, do you see, there is a difference in energy equity?

**RESPONDENT** 56:58

Um, yes, I think the younger women are definitely more empowered and more aware of their right to energy equity. Among a lot of women, even seen, you know, women seeking permission to keep the setpoint at a certain level. You know, I'm talking about the thermostat setpoint. Right. So, yeah, I think... I think across age groups have had to take a very broad perspective of it. Yes, I can see that things are changing that are more aware of their, you know, right to energy equity.

**INTERVIEWER** 57:56

Right. Right. Oh, when new energy infrastructure and technologies are planned or provided for what, in your view, are the differences between men and women? In terms of who benefits out of it?

**RESPONDENT** 58:19

Yeah, again, XXXX, I have not seen that. I've not seen that as a factor at all, in the policy projects I have been involved so much. Because, you know, the, like I said, you know, the policy projects we've worked on is, you know, what the standards be for what the energy efficiency standards should be for an appliance or for the building material, or, you know, what the embodied energy level for a building material should be? So these things tend to be, you know, gender neutral.

**INTERVIEWER** 59:04

Right.

**RESPONDENT** 59:07

And, and, in the policy projects, that would take these into account would be more hands on where you're, you know, working with a specific group of people on a specific site, our projects are actually site neutral. You know.

**INTERVIEWER** 59:29

I mean, it's also XXXX actually, it goes down to like, for example, you've worked with XXXX. And one of the things that XXXX does, I'm just giving you an example, that one of the things that B does is do this five star rating, the star rating, right?

**RESPONDENT** 59:45

Yes, yes.

**INTERVIEWER** 59:45

Okay. And that is actually that goes to a huge part of the entire energy efficiency conversation today in terms of appliance and appliance buying and all that, no?

**RESPONDENT** 59:57

Right!

**INTERVIEWER** 59:58

What is seen is that this effort to make energy efficient products or appliances in that list, the labor saving devices which women use for their domestic chores, don't really feature as of yet, you know. So when we think sometimes that we are gender neutral, I mean, I'm not saying you worked on it, I'm just saying that you know, this is all part of a gender neutral that Okay, so you will get it and fan will get it and all but there is no thought that a mix, you should also be getting the same R&D and the cost of the mix, you should be coming down so that it becomes more affordable for more people to use it or a washing machine or a dishwasher, because these are humongous labor engaging components of a woman's life. But the same effort of R&D to make these components, machines more energy efficient, or make this more cost benefit beneficial, is not actually seen as much as say, a mobile phone.

**RESPONDENT** 1:01:19

Right, right. Absolutely. Right.

**INTERVIEWER** 1:01:22

Or a television, isn't it? Yes. That that's what I mean that you know, even within the planning process, it's fine. If you haven't really, like worked on such issues. I was just giving you an example of what I meant by that question. Yeah.

**RESPONDENT** 1:01:39

Right. Yeah, that is true. Although that is set to change. There are standards coming in for a whole new range of devices as well. Again, I'm not specifically sure about, you know, which devices these are, but I know that the next set, like you said, the grinder and the mixer.... . all of these will now be included, like the stakeholder meetings are now going on, because you know, the stakeholder meetings are an important part of all these standards, because the manufacturers and the industry has to be with you. And you have to carry them along while formulating any of these standards. And so, another point, I would like to be make here is that these stakeholder consultations, unfortunately, I have not seen women at the table....

**INTERVIEWER** 1:02:50

I was just going to ask you, So stakeholders are basically not users....

**RESPONDENT** 1:02:58

Yeah, they're not users. they are manufacturers.... Yeah,

**INTERVIEWER** 1:03:05

that was actually my next question that whether you find men and women participate equally, in decision making about energy access, about various issues of energy access, including the right mechanical labor saving device, right?

**RESPONDENT** 1:03:26

Yeah, so if I talk about my specific experience when you know, most of these roundtables or at the, you know, the stakeholder conferences, or, you know, where these high level discussions are taking place, we've all noted, you know, the people who were in the room. There are 30 other men are at the table. So it's... it's always been disproportionate. It's always been disproportionate. It continues to be. Yeah. But, but I'm optimistic because in a very small way, I'm seeing that, you know, the women practitioners are increasing. So it will take us a while, but we'll be important stakeholders, soon. Which was a few weeks or you know, not a few but you know, 10 1520 years of practice to actually get to that table so I can see that, you know, in our office, I would say there is no.... There are as many women as men working in this field so I see no reason for the disparity to continue...

**INTERVIEWER** 1:05:15

And by practitioners you mean who? are you talking about energy practitioners or....?

**RESPONDENT** 1:05:30

No, no all of these because these are.... see the manufacturers...

**INTERVIEWER** 00:04

Yeah. So what I wanted to ask you next was does gender equity factor... Does it figure in your work on energy access?

**RESPONDENT** 00:22

So, uh, no, I mean, yeah, the nature of projects like whether it's on site work, or, you know, the policy work that we've done, it's, it's primarily been gender neutral, as in gender has not been an aspect that we've looked into at all other than, you know, in a very, I would say, in a very superficial way. I'll just elaborate. So the, you know, this large project that we are working on that I spoke about called XXXX. It's, it's XXXX, that is what *XXXX* stands for. Right. So in that, you know, one third of our project component is to actually do outreach and training on all things related to building energy efficiency. So we have taken that opportunity to, you know, all through the last two or three years, we've been running a series of webinars on net zero energy buildings, and that is the only place where we actually see, you know, we actually take note of the gender of the people attending, right, because we are also reporting that. So we can see that, you know, slowly the client, which in this cases XXXX is, is becoming very interested in this gender based reporting of impact. So, so, yeah, that I But, like I said, I mean, it's very superficial, it's not like we are trying to reach out to more women in any kind of a calculated way. It's, it's just that we are reporting how many people we are reaching out to. And it's, you know, typically, as many or more women attend these webinars.

**INTERVIEWER** 02:58

Okay. Okay. Have you like to have a conjecture as to why there are as many or more women who attend these webinars?

**RESPONDENT** 03:14

I mean, it's a it's a, it's a broader answer that I'd like to offer. That's always been the case, if you see, you know, women are always interested in learning, in upgrading upscaling their skills. And they're always in the learning mode, I guess, because we are on the backfoot to begin with, and, and we are trying to compensate for that. So I, I am even in our office, I find that if there's any kind of you know, skill upgrading workshop or training or you know, anything to do with outside of the regular course of work, I find that the women and the girls in the office or keener, you know, more enthusiastic than the boys I guess they are, we are all trying to prove something here....

**INTERVIEWER** 04:24

interesting. That’s a very interesting thing...So,

**RESPONDENT** 04:29

Especially the younger of them, and you know, I find, I'm just very happy to note their drive and their commitment to enhance their knowledge and their skills.

Part 3

**INTERVIEWER** 04:49

Interesting. So, within your office... in your organization, are there any processes where... which you would say, is gender supportive or gender sensitive? Any internal priorities processes that you exercise within your organization?

**RESPONDENT** 05:15

Well, I would say our office, it's a general a considered a benign office to work in and where we are not so particular about timing and discipline and following the rule to the letter, we are more interested in, you know, following the rule in its spirit. So again, it extends both to men and women, there is a lot of flexibility, especially for women, there is more flexibility in terms of telecommuting or so very often, you know, the young mothers are, it's perfectly okay for them to work from home for a period of two years or even more if that is what they find more convenient. . So we've always strived to be benign office to come to work in and I think, more often than not, we see people really appreciating that. But I wouldn't say that it is specifically benign to women. compared to men, I mean, men are entitled to, you know, if we've had people take a sabbatical for a year to figure out what else they want to do, and then come back after a year so that, you know, access to such policies is across gender. But definitely, I have heard, you know, specially the women who have young children or babies, they are very appreciative of telecommuting and, and to be able to define their own work hours. So that is one other. One other thing we follow is that, you know, one works eight hours a day, or to be more precise, 40 hours a week, and you pick the hours yourself. So you're not required to be in office between nine and five. Unless you are required to be in office for, you know, for the benefit of others or the client or being on the site...

**INTERVIEWER** 08:05

Planned interaction.

**RESPONDENT** 08:06

Right. Right. Right. Yeah.

**INTERVIEWER** 08:09

So and you feel that, though, these are, like really gender neutral policies that you've had, but they have been gender supportive or gender sensitive. I mean, even if you didn't really intend it, it was not intentional, probably from your side, you were just being flexible. But you feel that that has been a comfort, it has increased gender participation within your work? You feel that? Like, it's considered a comfortable place for women to work, especially young mothers to work.

**RESPONDENT** 08:50

Definitely, definitely. And we've, we've seen that. I don't know if this is a very biased thing to say, but women with young children have actually turned out to be our best resources. You know, they are working practically all the time, when then, you know, the time away from the children, they're putting in their best because they know that this is time away from the child. So in my experience, it's been a very, very positive.... you know, that has been my takeaway from this. I work with a close knit team of three young mothers and they are, you know, they are the backbone of my team. And the really our best resources.

**INTERVIEWER** 09:49

Right. thinking beyond the specific work. Do you think energy access policies should be Gender sensitive. XXXX, is it possible for you to increase your volume? Like is your... Okay, sure. Is that better? Can you hear me now?

**RESPONDENT** 10:12

Yeah. Okay.

**INTERVIEWER** 10:13

So what I was asking is thinking beyond your specific work? Do you think energy access policies need to be gender sensitive?

**RESPONDENT** 10:28

Yeah, I I think energy access? Yeah. The answer would be yes. Simply because, you know, the way we are right now, and I mean, in terms of societal expectations and pressures, and the just the way we are set up, women are disproportionately affected by lack of energy access. So yeah, most definitely, you know, gender should be a factor, because I feel they just... they are..., they just falling through the cracks, you know, the other issues are addressed, before we come to issues that specifically affect women in a very profound way, in a way that, you know, their, their day to day functioning, their, you know, the leisure time on their hands, their very lives are affected.

**INTERVIEWER** 11:37

Right, could you elaborate on that a little bit, like when you say disproportionate, and women falling through cracks, issues affecting women falling through the cracks, could you give some examples?

**RESPONDENT** 11:51

You know, like, like, the way you mentioned about the appliances, our attention is clearly on, you know, ACs, because they are the largest chunk of energy consumption, you know, the largest sector is heating and cooling. So the other you know, aspects of appliances, like, say refrigerators or washing machines, you know, the, if we promote access to such devices, it, it really is life changing for a woman. So, so somehow, I feel that this is a lens that we now need to start using. So, our metrics cannot just be, you know, kilowatt hours saved, but also, you know, a more qualitative metric of how this affects livelihoods or life itself or your day-to-day performance or, you know, how, how much time you have on your hands at the end of the day.

**INTERVIEWER** 13:17

Right, right. And what do you see are the policy gaps around women's access to energy?

**RESPONDENT** 13:34

Well the largest gap is in, you know, access to cooking fuel and access to water. And I think, to a certain extent, there was an attempt to address this by providing, you know, the cooking gas to rural women. But... You mean, XXXX...yeah, Yeah. But, again, what I know, anecdotally, it's not been as successful as it might have been, if it was, if it were implemented in a more farsighted way.

**INTERVIEWER** 14:26

Right. And what were you talking about the water?

**RESPONDENT** 14:31

Yeah, access to water. So again, the burden of you know, making water available to the family falls on the shoulders of women. And, and we've all heard stories of you know, how hours are spent in just ensuring access to potable water for the family. So I mean, these two are just non negotiable. We cannot proceed without ensuring access to these basic commodities.

**INTERVIEWER** 15:11

And you think that these today don't get the level of priority that it should?

**RESPONDENT** 15:16

Yeah, yeah, absolutely. I mean, these, these should be top priorities by all standards. So our metrics need to change.

**INTERVIEWER** 15:32

So what do you find any related social policies, which would have an impact on energy equity, ... I don’t know....education health...

**RESPONDENT** 15:45

I mean at a very basic level, you know, I think, education to women, more equality between the genders, empowerment of women, all of these will ultimately translate to distributed household work, distributed rights, distributed duties, distributed in a more equitable, more desirable manner. So yeah, in the long..., but these are all, you know, decade for a woman in school today, you know, for this to translate into some real difference in her life that will take a decade. So these are all long term policies, but they should have been implemented 50 years ago, we are just running late.

**INTERVIEWER** 16:52

Right. Right. Also, like what you were talking about? No. Like, on one side, you have noticed this eagerness amongst women for their skill building and, like gaining knowledge. But probably you, you're talking about one sector of women, probably the professional women, whereas what has your experience been, When you have worked at the household level? Have you had any interaction with women? any form of conversation with women? And in that case, have you seen any difference of perXXXXion between men and women in terms of, say, more energy efficiency, more energy, better energy management, etc.?

**RESPONDENT** 17:44

Yeah, I think, I think I find, again, like, this is not professional work, but just from my interactions with women from different parts of the society. You know, I find women are very open or very, yeah, they're very open to these ideas. So it's easy to have a conversation with them about the environment, energy efficiency, there is a keen sense of responsibility, and I think it may be something to do with their, you know, their traditional role of nurturing so nurturing the planet, nurturing the earth is sort of an extension, it's an extension of, you know, looking after your family. So immediately, you know, issues of composting of you know, disposing of waste and you know, segregating your waste all of that it's, I've not, I've never found, you know, a barrier of understanding or of keenness or of, you know, willingness to implement these they have an innate sort of understanding and, and an uptake of these ideas.

**INTERVIEWER** 19:25

Right. That's really very interesting. Yeah, because this is actually very similar to the feedback that I got, when I was talking to some other people who are working with I mean, like under XXXX the energy, there are these energy management groups, right, at state level, and I was talking to them as a part of this research, and they were also telling me that they specifically focus on women, because they find women are better managers of energy. So even at household level, definitely, but even they want women to be given those management roles even at community level and all which they don't have, because of, you know, the kind of patriarchal setup that most of our politics also kind of works with. But they feel that if women had that, even at community levels, the management of energy would be better, be more efficient.

**RESPONDENT** 20:23

Yeah. And you do see a lot more women entrepreneurs in the rural India, entrepreneurs related to energy efficient and off grid products.

**INTERVIEWER** 20:38

Right. Right.

**RESPONDENT** 20:40

So they're able to market it better, they're able to convince other women better and yeah,

**INTERVIEWER** 20:49

Also, in the renewable energy sector, do you find more women entrepreneurs?

**RESPONDENT** 20:55

No, not in the mainstream, the mainstream is completely entirely driven by men. I've not come across a single entrepreneur.

**INTERVIEWER** 21:08

Okay.

**RESPONDENT** 21:10

But, but on the other hand, you know, it's the reverse when it comes to the renewable sector or the off grid appliances are being promoted to enhance quality of life. Versus in the urban areas where it's, it's the bottom line that's driving the, you know, the renewable revolution.

**INTERVIEWER** 21:45

Okay. You mean in the rural sector? What kind of appliances? If you could give some examples?

21:52

Like lamps, for instance? So, the chargeable, solar lamps, right, can, you know, completely modify the quality of life in a house because you charge the lamps through the day and at night, children can study, the household can be lit, it's easier to cook. And there are multiple benefits to having, you know, an appliance that is not dependent on the electricity grid.

**INTERVIEWER** 22:29

Right. And you find more women entrepreneurs in these kind of ventures?

**RESPONDENT** 22:36

Yes, exactly.

**INTERVIEWER** 22:38

Because they also connect better to the women who are probably making those choices for the... for their children and their homes.

**RESPONDENT** 22:47

Yeah, because they are also the beneficiaries. So they have the are better convinced about the benefits of the appliance. So they're able to market it better... More convincingly.

**INTERVIEWER** 23:03

Right, right. And these are and but these are not like expensive items, these are also more easily like they are.... the solar LED bulbs have really come down on costs right over over the last five, six years.

**RESPONDENT** 23:25

Right. So these are not expensive items. So these are items about which the women may have a say...

**INTERVIEWER** 23:36

Certain autonomy.

**RESPONDENT** 23:37

Yeah, yeah.

Part 4

**INTERVIEWER** 23:38

Right. Right. But on the other hand, when you actually look at larger renewable energy access systems, many of them need certain finance supports. Right? And what do you do you think that there is an understanding of gender sensitivity in those finance supports?

**RESPONDENT** 24:08

No.

**INTERVIEWER** 24:08

Especially, I want you to think of livelihood kind of things. I mean, not just domestic needs, but even home based livelihoods or like which a lot of women do or livelihoods which depend upon energy and in spaces where there are no grid energy or and you need a certain amount of funds to put together that renewable energy source. What do you.... do you think that finance processes should be gender sensitive? And if so, how should they be gender sensitive?

**RESPONDENT** 24:49

And no... so as the way the system is set up, now, it's not gender sensitive at all. It ... gender doesn't figure in the whole equation. Once the stakes get higher, it's all.... the decision making is all by men or it's, or it's gender neutral in the sense that you know, somebody's gender does not figure in that equation at all. So it's at the end of

**INTERVIEWER** 25:31

That’s not gender neutral, that's more gender blind. blind. Yeah.

**RESPONDENT** 25:36

Yeah, exactly. So it's, it's completely gender blind. And I think, as the stakes get tired, you know, the decision making just somehow just shifts to the men. Yeah.

**INTERVIEWER** 25:52

Because within the gender sector, it is quite well known, and evidenced that traditional finance processes are inaccessible to women. Because... mostly because traditional finance processes like banks, if they want to give you a loan, they have to get a collateral. And women don't have land, women are not owners of land, they don't have personal wealth. Right. So that becomes a huge bottleneck. And women, though, you know, at the microcredit level, women almost never have bad loans. But the way they like to repay back... like for women, it's much more difficult to make a substantial monthly repayment, but they are more comfortable doing a daily or a weekly repayment. But then banks don't consider those repayment structures. Bank don't consider structure structures, which don't need high cholesterol, you know, so, women struggle to access finances, which say, 20 - 30,000, they will get within their microcredit circuits like you know, the self help groups, etc. But the moment they need, say, for example, they need one lakh rupees to set up a solar, small terrace plant, which would support some micro industry, they are trying to run from their home, maybe grinding of pulses or rice or whatever, you know, they just completely fall out of that bracket of being able to fund themselves to do it. Because they don't have assets. Women don't have assets. So that's one of the key challenge of finance, that we look at.

**RESPONDENT** 27:41

Right. Right. So it's a more I mean, it's a very, it's a very fundamental problem. So you know, any kind of superficial, addressing any kind of superficial gaps and policy will not address it. It's a it's at its base, it's a societal problem. So you know, things need to change at that level.

**INTERVIEWER** 28:10

But policies probably can like, for example, what you're talking about the XXXX program, right, so now, you have started looking at how many women attend your webinars, just because that that program asks you to report that right.

**RESPONDENT** 28:25

Right, right.

**INTERVIEWER** 28:27

For me, for this particular, of course, I mean, this is a gender based research program, but I'm mandated to have at least 50% respondents who are non male, right, so I have to actually, specifically... so that's the next level, like you are not really specifically targeting women, but you're reporting how many women are attending, my mandate is taking it to the next level where I am mandated to actually ensure that 50% or more are non male participants. So if there are there are things which can be actually built into policy structures, which don't get built into policy structures, you know, that's the....

**RESPONDENT** 29:11

Right. Yeah. Okay.

Part 5 (Closing)

**INTERVIEWER** 29:13

So, so yeah, so we're kind of done with the basic questions. So anything else you want to discuss on this topic? Hello?

**RESPONDENT** 29:30

Yeah, no, I'm just thinking if there's anything specific that we...

**INTERVIEWER** 29:34

Would you like to put on on your camera.

**RESPONDENT** 29:38

Yeah. I should also swXXXXh on the lights because it's now dark here...

**INTERVIEWER** 29:51

Already dark for you guys.

**RESPONDENT** 29:52

Yeah.

**INTERVIEWER** 29:54

For us, too. Not as much but.... And would you be available for follow up questions should they arise?

**RESPONDENT** 30:21

Sure. So I can Yeah, I'd also put my thoughts together on if we omitted anything, I can't think of anything. I mean, this is already beyond what I had expected. Really, because, like I told you like gender has never been a lens for us.

**INTERVIEWER** 30:50

Right. And if you can, I had asked you for that. If you can think of other people I should talk to, do send me some connects for that.

**RESPONDENT** 31:01

Yes, I will. So exXXXX that ... I don't know who you already....

**INTERVIEWER** 31:14

Yeah, if you send me names, then I can kind of tell you whether I've talked to them or not. Okay, I'll do that. I'm mostly talking to people within the energy sector, and some whose work overlap with the gender sector. But I haven't really talked to practitioners that much, and I'm trying to now include that category. Because what we also started feeling, I mean, we have had that feedback that at the practice level, the gender lens is really missing. So it's also an attempt to start including practitioners within our conversation.

**RESPONDENT** 32:02

Okay, so I can send you a few names and....

**INTERVIEWER** 32:10

yeah, so I'm just going to stop the recording. Yeah, yeah.