Pitch to Policy program in India and Indonesia
A co creation approach towards decarbonization

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Abstract

Worldwide, the building and construction sector contributes 37% of energy use and 39% of energy and process related carbon emissions [1]. In order to keep global warming below 1.5oC the buildings sector must halve its emissions by 2030 and be net-zero by 2050 [2], yet emissions were their highest ever in 2021 [1] because rates of new construction and increases in energy demand were far greater than efficiency gains delivered by new building regulations and other policy reforms. Global Buildings Performance Network (GBPN) and Monash University Australia conceived and implemented the Pitch to Policy (P>P) programme as an innovative experiment aimed at validating crowdsourcing, co-creation and systems thinking approaches to promote inclusive policy making for climate action. The program brought relevant government departments, policy makers and entrepreneurs together to co-create innovative solutions for decarbonizing the buildings sector. The program was piloted in two growing economies - India and Indonesia - in partnership with local organisations. A total of 25 teams of professionals participated in the program and 6 finalist teams were awarded seed funding. Some teams have gone on to win contracts, initiate important industry efforts and trial their inventions. Future work will build on post-P>P government engagement for winning teams.

Keywords - Built environment, innovation competition, public policy, India, Indonesia

1. Background

In 2015 The Government of India inaugurated Pardhan Mantri Awas Yojna – Urban (PMAY-U), an initiative to largely address the housing shortages for economically weaker (EWS) populations in urban areas. The program aims to provide permanent housing to all eligible urban populations by 2024. Eco-Niwas Samitha (ENS) is another initiative by the Government of India to develop and implement the Energy Conservation Building Code for Residential Buildings (ECBC-R). India has made world leading progress in reducing poverty through housing [3], but more innovation in this sector is needed to also reach net zero for housing.

Like India, Indonesia is rapidly advancing and has its own goals for building sustainability. In 2016 Indonesia adopted the Urban Development Policy as part of the urban dimension of the SDGs. Among the 5 pillars of policy, pillar 2 calls for development of Green Building [6]. Following the introduction of the country's first regulation on green building in 2015 and the launch of a promising roadmap for decarbonising buildings, Indonesia is still continuing the process of strengthening and improving the coherence of the regulatory framework to support its implementation and enforcement. Indonesia too will benefit from more innovations both in technology but also policy implementations.

Climate Change – Indian Perspective

With a population of 1.38 billion, India is the most populous country in the world. India is currently the 3rd largest greenhouse gas emitting country with net GHG emission of 3619.8 tonnes of GHG emissions in 2018 [1]. The Indian climate is likely to warm by 0.5 degree centigrade between 2010 to 2030, (which is equivalent to the entire 20th century climate warming of India) and an overall warming of 2-4 degrees by the end of the 21st century [4]. India's per capita CO_2 emissions have increased by 266% in the last two decades, from 0.6 metric tonnes in 1990 to 1.6 metric tonnes in 2019 [5]. Currently, the buildings sector is the 4th largest CO_2 emitter in India with 164 Mt tonnes in 2019 [6]. In addition, the cement industry contributes 211 Mt tonnes of CO_2 emissions to the national tally [6].

's urban population is growing at 2.3% per annum [7]. In 1990, 26% of the total population of India was living in Urban areas which increased to 35% by 2020 [8]. Urban areas often have higher temperatures than surrounding rural areas owing to the Urban Heat Island effect [9]. Some recent studies suggested that urbanisation contributes 30%-50% to heat stress index during summers [10]. According to the IEA, the buildings sector contributes 39% of global CO2 emissions and accounts for 36% of final energy use [1]. These climate impacts could reduce the country's GDP by 2.5 to 7% which could result in an increase in poverty.

Climate Change – Indonesian Perspective

With a population of 273 million Indonesia is the world's 4th most populated country. Indonesia is particularly exposed to global heating: from rising temperatures to irregular weather patterns that are causing wetter climate in one part of the nation to dry effects in other regions (World Bank, 2020). The total CO2 emission of Indonesia has increased from 665,929.63 Gt in 1990 to 1,593,163 Gt in 2019 [11] with a metric ton per capita increase from 0.8 in 1990 to 2.8 in 2019 (World Bank, 2022). The share of CO2 emissions of industry and energy sectors has increased from 19.3% in 1990 to 42.30% in 2019 [11]. This rapid industrialization has caused the equally rapid urbanisation in the country.

The country's urban population is growing at 4.1% per annum, the highest rate after China (World Bank 2021). Between 1980 to 2010, the country's urban population has grown 400% from 32.8 million to 118.3 million [12].

In the last two decades alone Indonesia's mean temperature has increased by almost half a centigrade from 25.85 in 2000 to 26.19 in 2020. (World Bank, 2020). Urban areas often have higher temperatures than surrounding rural areas owing to the Urban Heat Island effect [9]. Some recent studies suggested that urbanisation contributes 30%-50% to heat stress index during summers [10]. According to the IEA, the buildings sector contributes 39% of global CO2 emissions and accounts for 36% of final energy use [1]. These climate impacts could reduce the country's GDP by 2.5 to 7% which could result in an increase in poverty [13].

2. Methods

Given the climate imperatives in India and Indonesia and the opportunities to innovate with policy implementation, The Pitch to Policy (P>P) program was designed to bring government policy makers and entrepreneurs on to a single platform where they can collaborate and co-create entrepreneurial ideas into feasible solutions and policy ideas for governments to adopt and/or learn from to achieve greater policy ambition in built environment sustainability. The built environment is the main target for P>P due to the funding imperatives of the principal donor supporting the authors' organisation.

P>P inherits its approach from Knowledge and Innovation Community (KIC), an EU-funded open-source ecosystem for innovation [14]. KIC organises accelerators through its hubs internationally using business logic and results oriented approaches to cover entire innovation value chains in a specific field. P>P was adapted from KIC's ClimateLaunchpad and implemented as a policy bootcamp where applications/ideas are solicited from professionals, late-stage research, and startups. ClimateLaunchpad promotes as "the world's largest and most successful pre accelerator program for climate start-ups" and is market facing [15].

Governments and ministries at local, regional, and/or national level participate in P>P by workshopping a policy, regulation or programme that could be informed by "crowdsourced" (as in publicly solicited) proposals from professionals working close to the issue at hand. Since many technologies and new practices are needed to decarbonise the built environment, looking to emerging innovation with new or reformed public policy is a systems thinking approach [16] that benefits both from entrepreneurs, policymakers and many other contributors. This approach examines the built environment more like a biological system that includes features such as emergence, path dependency, established networks of actors, and various kinds of repeating cycles. This approach differs greatly from purely economic or engineering analyses. Most importantly, it helps identify the size and complexity of the changes which might be facilitated by technology; not just the utility of technology and its potential market value.

P>P is not, as such, part of the traditional government processes of public consultation, formation of research and development partnerships (R&DP's), public-private partnerships (PPPs) or government-run incubators. The programme has been designed with an intention and assumption that the climate emergency can motivate more rapid interactions across silos and that it can utilise more innovation. Trist [17] validated this approach in his research on "organisational ecology". Trist introduces that various actors and organisations in the economy have elaborate networks and influences on each other. Governance is rarely entirely "top down" and most often requires local adaptations to be implemented. Such a hierarchy is part of the overall organisational ecology.

The program was implemented to solicit policy and regulatory supporting technologies and practices from the innovation community. This included new ideas for reducing carbon footprint in the construction sector. Through a process of liaison, the theme of each P>P event was determined, usually from current government decarbonisation goals. This is then reframed as the callout to the innovation, sustainability and built environment ecosystem. The agreed callout also forms the basis of preselection of applicants.

Proposals meeting the criteria of the specific P>P callout were shortlisted to participate in the P>P programme. The callouts were via professional and academic networks. A team could include professionals, academics and researchers, but team members were explicitly limited by profession or interest. For teams to participate, one team member must be a country national located in the participating country. Teams consist of a minimum of two members. Applying for P>P required an online application.

The applicant ideas were evaluated by the judges and/or by the local country partner with this briefing from GBPN:

● Does the idea introduce and demonstrate the feasibility of a new policy or regulatory measures to improve the built environment or reduce policy implementation risk?

● Does the idea use building materials with a lower carbon footprint than conventional building materials?

● Does the idea introduce and use energy conservation techniques in building design?

● Does the idea use techniques for improving efficiency of alternative energy solutions such as solar power?

● Does the idea promote new teaching and learning programs for rapid accreditation or rapid upgrading of skills?

The India program was implemented in partnership with a research organisation, while the authors' institutions were the technical partners. In Indonesia, the national industry association partnered with the author's organisations and the callout was principally to the Indonesian membership who were given continuing professional development credits for participating.

The participating teams were developed by providing access to high quality information resources, expert insights, and specifically tailored education tools for each idea. The facilitator was an expert from KIC's ClimateLaunchpad. Mentors from industry, government and academia are recruited to interact individually with teams in a four week lead up after team selection.

The teams participated in 3-day intensive bootcamp where they were provided further coaching to polish their ideas to be ready to pitch. The boot camp also trained teams in the art of storytelling through a pitch, so they could develop and present a convincing pitch for their ideas and are ready to pitch it to relevant government and other relevant organisations and stakeholders.

Since this was a pilot program, the primary focus was to test and evaluate the program design and methodology assumptions. Post program evaluation surveys and focus group discussions were used as primary evaluation methodology. These are reported below.

A P>P workbook was developed to train professionals and startups on the art of storytelling through pitching. This toolkit was designed, based on an KIC creative commons workbook. It was amended and optimised to meet the requirements of the P>P program.

Whereas the KIC workbook pitching format includes content on cash flows, customer research and financial/funding projections (Figure 1, below) [18], while the P>P workbook was adapted to treat a government as the customer, with government needs as key to the pitch (Figure 2, below). As such, financial modelling was removed because the future profitability of innovations is less important than the potential for scale up via government adoption of innovation concepts in the pitch.

Figure 1: ClimateLaunchpad 2019 9-slide deck (layout changed by author) [18] (CC Attribution-ShareAlike 4.0

The workbook is a hands-on cookbook and in phase-1, uses systems thinking methodology for governance (for example: [19]) to train the professionals and startups to develop an eight slide comprehensive pitch deck. The slides and the narrative follow a very strict format which was also adopted from KIC. The deck and the intended narrative are:

1. Title Slide – Introduces the idea, the presenter, objective and intended outcome in one synthesised statement. Personal connection of the presenter.

2. Opportunity Slide – States the opportunity & possible benefit at scale. Not a statement of the problem.

3. Landscape Slide – History, actors, past efforts, path dependencies, ecologies, economics. This depends specifically on the approach the pitch takes to novelty.

4. Situation Slide – Presents the situational analysis and why the problem is a persistent problem. This should be a quite simple loop or loops showing some key actors, organisations or cycles.

5. The Change Slide – How the idea will influence the current situation and bring about change. This is often shown by the innovation breaking one or more of the cycles of slide 4.

6. The Ask Slide – States the resources required and reiterates benefits to the giver.

7. The Outcomes Slide – What the asked for resources will achieve in 1, 5, 10y if the asked for resources are provided. This may show what can be done with only some of the resources.

8. The Team and Dream Slide – Presents the team capacity, capability, and suitability for implementing the idea. Explains the dream - the very long term binding vision for the team.

In phase 2, the workbook was used as a guide to prepare for idea pitching. Using the workbook, the participants were mentored to practice and polish their pitch using a storytelling methodology provided from KIC. The focus of the training was to support the participants in building a strong

narrative that complements the pitch deck and optimises their tone and tempo while practising under guidance of expert mentors. The storytelling asserts that the spoken part of the pitch is more important than the slides. It advises that the presenter personalise the narrative and align the goals of the project with personal events or desires.

The Title: get roofs painted white with public ed and supply change

Regulatory intervention

The opportunity: Eighty percent of solar heat can be reflected by a white roof. This means less air conditioning or insulation.

More climate responsible roofing

The Landscape: thermal performance of roofs, embodied energy of insulation, public understanding

Reviewed material

The Situation: People do not know about thermal loading. Supply chain status quo.

Causal diagram

The Change:: 10000 buildings get white roofs through campaign and supply chain interventions. Saved CO2.

Project plan

The Ask: Campaign and supply chain labelling. Cost: $127,000

Trial budget

The Outcomes: Energy savings lead to more white roofs. Regulatory opportunity.

Causal diagram

The Team and Dream: Three professionals from "ThermaRoof" and "CoolRoof". "Cover a million roofs".

Quals and skills

Figure 2: P>P Workbook 8-slide deck, with example content. (author's work).

The participating teams pitched their ideas in front of an invited jury consisting of building experts, engineers, policy makers and entrepreneurs. The jury developed a rubric for assessing teams objectively. The below is the default rubric which the jury are encouraged to collaboratively customise to fit the call out of the P>P run.

2. Title: What is this? Do you meet the presenter and know what he or she is going to do? Is it a market intervention, a new policy, a law change, a public campaign, etc.? This needs to be very clear immediately and through the whole pitch. For a call out concerning renewables penetration, the Jury may want to hear the Title introduce the renewable innovation - technical, finance, behavioural, energy system or such.

3. Opportunity: How big can this be? Is the opportunity or challenge they identified a worthwhile challenge? It might be a very big challenge, but it has to have very great potential.

4. Theory: Have they done their homework? How well do they know the theory, background, economics or history, law of their subject?

5. System and actors: Why has this not happened already? How well do they explain why their idea has not been done already or has not proliferated already? What are the current obstacles? Who are the current actors (organisations, persons) who control the current situation?

6. Intervention: What are they going to do? What is their intervention? What steps are they going to take, who will they reach out to? What will they demonstrate? Is this practical, realistic, can it start tomorrow?

7. Ask: What do they want from you? Is it clear who or what organisation they want to ask? Do you understand why they ask for what they do and is their request justified? They ask for something specific that lets them do what they want in slide 5.

8. Outcomes and multipliers: Will it grow and what are the larger benefits? Their idea has to cause larger change, if indirectly. There has to be some enabling aspect of their effort so that larger change is possible. They state a timeframe and the larger impact of their effort at that time.

9. Team and Dream: Who are they and are the right people to do this? Their roles as they introduce them need to make sense. They need to give a future goal that is large but plausible.

10. X-Factor: the pitch needs to leave you impressed with the idea, the potential and the people. This performance needs to look easy. Pitch team members speak slowly with confidence. Not too many words. It is evident they are prepared and have practised, but also they engage. X Factor is your personal feeling.

The rubric scores each slide at 10 points with "X-Factor" at 20 points, giving 100 possible points per team. The jury were given a fixed time after each pitch to ask only elaboration questions. The jury retired to compare notes and rank the teams.

Winners received feedback and input by experts to further optimise their ideas. The best three pitches in each boot camp were awarded USD2000 prize money. Teams are encouraged to report back to GBPN; using a LinkedIn group.

3. Results

At the time of writing three Indian teams have progressed after P>P. One team concerned with networking has organised an important supply chain charter in India and asserted ambitious sustainability goals for signatories. The signatories include large national builders and innovative materials suppliers. This team has reported that it benefited from P>P and it cites its inclusion in the programme at the inception of its successful business history:

"The fact that we got to run our idea by a lot of sustainability professionals, it was like the first litmus test. Everybody had so many great insights and so much great feedback for us that it gave us the confidence to take it forward and start strengthening our idea even further." [20]

An India team concerned with prototype housing won a contract to support the implementation of efficiency legislation for all of southern India. This team worked with Global Buildings Performance Network (GBPN) as a knowledge partner on an important advanced housing project. An India team performed successful low income housing community outreach in a subsequent project with GBPN. They were able to determine the expectations for better housing and energy services. Two judges from the India programme have gone on to cooperate with GBPN on projects and the P>P India LinkedIn page received more than a thousand followers.

A post program survey was conducted to evaluate the outcomes of the programme by seeking feedback of participants. The survey findings showed that 80% were happy with the team's choice of project. 50% chose projects like their work whereas 40% said their concept did not have any relation with their workplace. 50% of teams were satisfied with the pitch format; however, the consensus was that the pitch format should have been longer and flexible in terms of content. 90% of participants agreed on the efficacy of bootcamp in improving their pitch deck development and pitching techniques while 100% participants agreed that interacting with teams improved their pitches. 90% participants were satisfied with the facilitators and presenters of the bootcamp. While all participants agreed that interacting with mentors improved their pitch and pitching performance, and 60% believed they needed more mentorship support in further optimising their pitch. All participants showed strong commitment to continue working on their ideas and showed willingness to pitch their ideas at further avenues if any opportunity arrived. They further showed strong agreement that if they received the support they asked for in their call to action, they would be able to initiate their projects ideas quickly. 90% of participants agreed that the P>P programme improved their capacity to develop, present and pitch their ideas and 70% of participants were willing to again participate in the P>P program.

Focus group discussions

A focus group discussion was arranged with participants to seek their feedback as well as assess what they have learned and how the program could be improved. Participants joined in the bootcamp with a preconceived notion that the programme is about learning about government policies, however, they were pleasantly surprised to learn that it was a hands-on training and development program to help them market their ideas.

Most of the participants were of the view that the single most important thing they learned was the issue of sustainability and how to break it down and explain it in plain but convincing language to government policy makers through pitches. However, the participants were still confused about how they can align or integrate their ideas with government policies.

The participants were asked about whether the P>P program met their expectations, and the majority of the participants agreed. Though, a significant number of participants expressed that Systems Changing theory was difficult to understand and it would be better if it can be translated into the language of the participating country. Indonesia participants were very satisfied that they received CPD points through P>P which could practically help them in their career.

4. Discussion

The main objective of the programme was to introduce an idea of crowdsourcing innovation for policy support. Our approach is that a startup bootcamp designed for boosting the investment or commercialisation of a sustainable technology could be extended to the development of government outreach and policy focus. Overall, participants were pleased to get this opportunity to get exposure and training about pitch deck development and pitching. They were satisfied to have a chance to network with experts and professionals from industry and were eager to participate in such programs whenever opportunity came. However, the consensus of their views was that the ideas they presented have a good chance to succeed as private or development sector initiatives but for the work to be aligned and integrated with government policy, a more concentrated effort is needed. The bootcamp Workbook was successfully used according to the feedback. Adapting from the open source ClimateLaunchpad [15] workbook provided valuable materials that attendees were able to use to develop content appropriate for governance. It is clear from the feedback of participants, judges and experts engaged in the program that the programme helps participating teams in optimising their ideas into feasible products or services. The participants felt that they had improved their pitching techniques during the bootcamp and learned to use the art of storytelling as a methodology for pitching their ideas. The programme has provided networking opportunities and publicity for all involved.

Concerning policy potentials: the challenges for the upcoming and highly progressive Indian ENSBC may be regional localisation, implementation and enforcement. P>P can help ground-level enforcement in India, which has not yet seen substantial implementation of the building energy code: several P>P pitches supported these policy steps with innovative technology and practices. They included building carbon passport systems, free building energy modelling software, energy meters for "negawatts", a clearinghouse for low carbon materials and more. Pitching these capabilities to state governments in India demonstrates that the market is ready and state implementers can look forward to coming technical capability and competition.

The similarities and differences between the two P>P programmes would provide material for a whole educational paper - but the main similarity was the raw ambition across teams regardless of whether they were younger, older, Muslim, women, academics or commercial providers, in both India and Indonesia equally. All overcame the challenges using English and heavily adapting their ideas to the fixed government-appropriate pitch format.

Some differences between India and Indonesia concerned how teams expected ongoing support and development. In Indonesia, since P>P was a closed event, participants treated it more as a membership design competition. In India P>P was treated more as an incubator. There was greater expectation in India to meet governments after P>P. This is an activity we will pursue much more actively next time.

5. Conclusion

It is clear that current policy progress for the built environment has not caused emissions to be reduced or in fact capped. This will require step changes in how buildings are designed, built and operated. Core to this will be innovative processes, products and practices. This work concluded a two-country pilot of Pitch To Policy (P>P), a special adaptation of Climate KIC's ClimateLaunchpad from commercialisation of sustainable products and services to pitching sustainable built environment

innovations direct to governments.

The programme ran in Indonesia and India, two countries with rapidly developing building sectors, and which are high energy and high carbon. Call-outs to commercial, academic and other sectors provided 25 teams of professionals for the two programmes. Each provided mentor support, educational materials, a bootcamp and a workbook introducing systems thinking and other concepts. A specialist facilitator from Climate KIC was engaged to deliver the modified programme.

From feedback received along with interviews and focus groups, the programme was popular and the material was felt to be relevant and valuable for polishing and pitching an innovation. How to directly connect innovations to live government policies was not fully solved, and follow-up after P>P did not connect teams to governments. To address this ongoing issue, we propose three changes:

1. Align each event with clear policy objectives/issues set by the participating governments;

2. Provide materials in local languages;

3. Follow-up and linking with incubator opportunities to further develop innovations with government support.

4. Judges/public servants should also participate in bootcamps to help keep ideation aligned with government priorities;

5. Revision of short-listing and judging criteria and rubrics to ensure more mature, implementable and scalable proposals are included in the pitching process.

India and Indonesia P>P could and should combine: many sustainability services are information and knowledge work that can be provided remotely. Also there is the great opportunity for exchange and cross-fertilization.

The P>P programme does not have set dates for its next event, however GBPN is presently pursuing a related programme in India which is establishing what would be the second part of the P>P ecosystem: living labs for testing policy and technology interventions in real homes. We also look forward to running P>P to explore the anticipated national carbon market in India. We hope to report on these in the future.

6. Acknowledgements

7. References

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