* **OVQ47**. I believe that the flexible allowance is very useful and has led to some significant innovations that are key to the sector, led by the base of innovators. In academia, we view the outputs of those projects as incredibly useful and in some cases it drives the direction of our fundamental research, as it gives us an idea of the direction that the industry is heading towards, and the priorities that are important. If anything, it should be expanded.
* **OVQ48**.  Likewise, the competitive funding pot is important for the same reasons stated in OVQ47, although being top-led and competitive, there is less opportunity for academia to contribute.
* **OVQ49**. There has been interest in the interdependencies across infrastructures (see <https://sussex.figshare.com/articles/report/Resilience_of_interdependent_critical_infrastructure/23486933>), which is occasionally addressed in EIC calls, but perhaps Ofgem can take a more cross-sectional approach in collaboration with other regulators, such as Ofwat or Ofcom. This would enable true innovation in this intermediate field.
* **OVQ50**. I am not aware of consumer sentiment towards innovation costs, but through my interaction with US-based utilities through IEEE Working Groups and committees (such as the IEEE Distribution Resilience Working Group), I believe that the UK energy sector needs innovation, and it also needs a more international outlook. I’ve been trying to bring the UK perspective to such IEEE professional initiatives, since this is where international standards are often set. In some cases, the UK is at the forefront of such professional organisation initiatives, but occasionally there is no representation. If the energy sector innovation is well-resourced, they will have the capacity to participate in such concerted actions and influence global developments in the energy industry. In short, the more the better.
* **OVQ51**. From the perspective of academia, it has been very challenging for us to engage with industry stakeholders. There is understandably a TRL disparity, where the industry is looking for something as close to TRL8-9 as possible, whereas academia often offers nothing beyond TRL 4-5. The gap between these two is supposedly bridged by Innovate UK and startup-type mentality, but this is often tricky to navigate, with several practical obstacles, such as the requirement for companies to invest their own money, and the strong preference towards SMEs. This leaves academia at the back seat, whereas large industry players are sometimes disinterested due to the high proportion of investment required by Innovate UK, and the uncertainty of the outcome. There are also only so many projects that can be supported by industry partners, and this leads to an extremely competitive field, in order to get their attention. SIF, NIA and similar initiatives are great, because they occasionally allow for industrial engagement with academia, but to my understanding there is limited facility to bridge the TRL gap and bring more fundamental research to the interest of industry. Still, there are many ways that academia can bridge this gap, and has proven this with cross-readiness projects such as flagship EU projects (H2020, etc), where fundamental research is developed alongside advanced trials, and is then proven, leading to technology development crossing e.g. TRLs 2-7 within the project duration. To my understanding, there is no actual barrier in SIF, NIA, etc, to enable such acceleration of research development to practice, but there is also no mechanism to encourage it. Hence, energy stakeholders are rarely interested in picking up a low-TRL project/concept and advancing it to a readiness that they are comfortable with. Instead, they seek ready-made innovations that can have impact straight away. EPSRC does encourage industry participation, but again this is very nominal, since the industry is unwilling to commit resources to a low-TRL project that may come to no or very little benefit in the short term, even though in some cases it might lead to decent impact within the organisation after 1-2 years. I believe that there should be a coordinated approach between the Research Councils, Innovate UK, and Ofgem, so that research and innovation funding and support are coordinated in a way that encourages seamless acceleration of innovations, instead of fragmenting it.
* **OVQ52**. This is exactly what is necessary, based on my response to OVQ51 above. Early-stage innovators are having to navigate a series of funders and trying to attract the interest of the industry to schemes (e.g. EPSRC projects) that are not at a stage that the industry innovation teams expect to see. There is no point in overlapping with EPSRC or Innovate UK, but there needs to be a coordinated acceleration action that bridges the gaps between the current siloed approach. More importantly, there need to be two aspects of this – a top-led approach where key challenges are called upon, and a bottom-led approach, where innovators offer solutions that are not necessarily visible to the industry. The administrative load of that may prove challenging (see EPSRC repeatedly unsuccessful proposal policies), but if properly managed can lead to significant benefits.
* **OVQ53**. A gradual approach for a small part makes sense, and it can be scaled up if oversubscribed. Sponsorship by networks is fine, as long as there is encouragement for the scheme to be open and inclusive.
* **OVQ54**. Perhaps the 5-year structure is not the main issue from my perspective. I have attempted to attract interest in an EPSRC project on a “COVID-19 resilience impact assessment toolkit” in 2020, through the Energy Innovation Centre (EIC), who promoted it to their partners. However, there was no uptake. The project would require very little engagement, mostly in the form of advisory meetings (e.g. 2-3 person-days per year), and potentially some data and information transfer. This is just one example of a more formal unsuccessful approach. The only other mechanism that academia has to engage industry is personal contacts and networking, which is essentially an exercise in social engineering to attract the interest of kind individuals who may be able to provide a small amount of advice to projects. The aforementioned EIC example would include a final outcome that would be readily implementable as a toolkit, and we were planning to use a software engineer to make sure that it is the case. Hence, it is not only the readiness that is a barrier. Finally, informal discussions with friends within the industry have indicated a preference to work with trusted contacts in specific reputable institutions, which may potentially introduce some bias in the already rather informal collaboration process. The industry is missing out on academic-driven innovations, despite the willingness of academia to do most of the leg-work to deliver the innovation as readily implementable as possible. I suggest a more active service / mechanism for matching innovators of all stages with network parties, that encourages network parties to be more open, or at least some regulatory requirement that stipulates this. Like a supercharged EIC, the current loose shape of which can be taken as a starting point.
* **OVQ57**. The answer to that question needs to be in the context of the size of the energy industry. There is a need for large flagship projects, but also small lean projects. The one thing that is problematic is that small, cheap and lead projects can sometimes be correlated with short durations, and large ones with long durations. I noticed recently that many SIF (and NIA) projects are no longer than 6 months, sometimes as a requirement of the scheme. There are possibilities for low-cost projects that take longer than a few months, if the innovator is lean in their resources. This would allow more projects and more diversity in the types of innovation projects.
* **OVQ58**. See answers above on the drive to engage industry with a wider field of innovators. A matching service and/or regulatory requirements would be able to bring diversity in the innovation landscape that does not come naturally to the industry. It may have to be more forcefully than loose “encouragement”, but it will be beneficial in the long run. After all, innovation is not the core business model for regulated industry, it’s service provision, so it’s really easy to discard it as “optional” and focus on the core functions.