1. What are the session key findings? What are the new Lesson(s) learned / Scientific progress (since AR5 release, if relevant)?

One of the key aims of the conference was to assess the potential for evidence-based solutions to climate change challenges, for instance by exploring potential solutions within the broader challenges of sustainable development, environmental conservation, equity, and cultural diversity. By reasons of absence of participants the topic was discussed from two points of view, the aviation and from the LED sector, instead of three.

The former case about the aviation revealed that this sector is a growing source of carbon dioxide emissions and an enabler of the global economy leading to a polarized debate about the economic benefits versus the environmental impact. This makes the sector a barometer of the world’s willingness to change economic models to deliver climate change mitigation. Currently aviation is outside the UNFCCC framework, with work on developing a way forward delegated to the International Civil Aviation Organization (ICAO). Aspirational targets have been proposed by the ICAO to limit net emissions based on a combination of shifting to bio fuel and market-based measures. However there are no plans to limit gross emissions, which are expected to more than double by 2050. The research reported in this presentation has identified a way forward, which requires moving away from fast-jet technology, except for an expensive First and Business Class service. Affordable flying will be on a new design of efficient and relatively slow air vehicle. Interviews with stakeholders found that passengers were generally content with the proposed changes and environmentalists were enthusiastic to shift from opposing flying to supporting the low-carbon model. Industry outside aviation was also willing to embrace the new model and focus on thinking through how they would adjust operations to suite. However, resistance was encountered from the two prime players, the aviation industry and government. The aviation industry was concerned at the impact on their business; concurring with the research, which indicated that parts of the industry are likely to be bankrupted. Governmental actors did not foresee aviation coming high enough up policy priorities for them to expend political capital on taking action. In conclusion, there is a bright future for low-carbon aviation but the demand for change will have to come from society to bring the future of aviation onto the political radar so that politicians agree the policy changes required to force a reluctant industry to respond.
The second case presented the contribution of the LED sector to the fight against climate change. To do so, the presenter introduced the obstacles that this sector faces to engage in a sustainable pathway. LED technologies can generate massive energy savings, but they require eco-design improvements in order to maximize their environmental benefits at each stage of their lifecycle. In order to facilitate the realization of these benefits, the obstacles faced by LED firms to take up environmental challenges were presented, and suggests solutions to overcome these obstacles.

The barriers identified are the following:

- Lack of certification mechanisms to check out the technical specifications of LED products.
- Inadequate support from national policies to support eco-innovation and emerging LED technologies.
- Increasing and unfair competition from non-European firms.
- Early failure of LED drivers.
- Lack of funding to support SMEs’ eco-innovation.
- Lack of well trained and educated staff on eco-innovations.
- Existence of litigations between firms.

Example of solutions discussed are the following:

- Launch of an EU programme to guaranty the accuracy of LED products’ specifications.
- Introducing financial support schemes to reward consumers adopting eco-designed LEDs.
- Strengthening the environmental requirements of LED products.
- Increase specific funding schemes targeting eco-innovates SMEs.
- Strengthening collaboration on LED eco-innovation between research institutes, SMEs and universities.
- Improve the standardization of LED products and components.
- Support the collaboration between large and small LED companies.

2. **What are the major knowledge Gaps and Research Needs identified in the session?**

Viewing the answer to Q3, the knowledge gap is on adaptation and broader spectrum of industries. The major knowledge gaps and research needs identified in the session, as well as when preparing the session is the lack of focus on the SMEs in terms of their collective impact, actions and barriers resulting in lack of actions. There is also a lack of research focus on the role of the finance sector in finding solution to sustainability issues and climate change.

3. **Did the session discuss/identify promising approaches in the fields of Adaptation and mitigation, or both?**

The key focus of both of these presentations was on mitigation via energy savings. Some promising approaches were discussed in the case of aviation, for instance low-carbon business model, but in case of the LED industry the way to bridge the gap between LED entrepreneurs / start-up businesses.
4. Are there take-home messages from the session?

The take-home message from the session is that there are several gaps that need to be bridged. Often the interface between governance, the private sector (business), and civil societies are discussed, but in the preparation of the session it is also clear that the academia needs to be a part of this dialogue.

5. Are there Important Quotes from the session?

As I was not aware that I would report on the session afterwards I am unfortunately not able to report in important direct quotes from the session.

6. Please include any other remark that you might have

I have been to both Nordic and European scientific conferences, but I found the tone given in this conference more positively geared to hope and solutions than in the conferences I have participated in previously.