Supply Chain School Horizon Group Meeting

Date: Monday 12th Dec 2016; 10 am to 1pm
Venue: Middlesex University, The Burroughs, Hendon, London, NW4 4BT

Attendees: Jacqui Glass *(Loughborough University – Chair),* Mohammad Rickaby *(Action Sustainability)*, Erica Russell *(Carillion),* Iain Walpole *(Hanson),* Gareth Rondel *(Kier),* Maeve O'Loughlin and Lian Lundy *(Middlesex University)*, James Upstill-Goddard *(Responsible Solutions),* Laura Spence and Leonardo Rinaldi *(Royal Holloway)*, Kieran Brocklebank *(United Utilities),* Alice Owen *(University of Leeds),* Tony Parry *(University of Nottingham),* Mark Gaterell *(University of Portsmouth)*

Apologies: Shaun McCarthy *(Action Sustainability),* Donna Hunt *(Aggregate Industries)*, Ben Lever *(CITB),* Keith Chanter *(EMCOR UK),* Scott Fernie *(Loughborough University),* Richard Crocker *(Lendlease),*Paul Wyton *(Sheffield Hallam University),* Adam Robinson *(Sir Robert McAlpine)*, Diego Vazquez-Brust *(Royal Holloway)*, Andy Swain *(Tarmac),* Alexander Trautrims *(University of Nottingham),* Simon Tranter *(Willmott Dixon)*

Minutes of the Meeting/ Workshop

1. **Introductions**

   - Jacqui welcomed everyone to the meeting.

2. **Actions from previous meeting**

   All actions from the previous meeting were completed, except for the FIR update. Mohammad will liaise with Liz Holford to provide an update at a future meeting.

3. **Brief School Update**

   - Mohammad provided a brief update on School matters. It was noted that the School currently has 51 partners, which is increasing. The School is continuously following up with potential new partners.
   - Mohammad briefly went through the dashboard for the School KPIs (see main presentation slides *(slide no. 9)*), and noted that the School is continuing to perform exceptionally well and is on track to meet its annual targets.

4. **Introduction from United Utilities (UU)**

   - Before commencing project presentations, Kieran Brocklebank (Head of Innovations) gave a short presentation about UU and the nature of work they undertake.
   - Kieran addressed the key factors that impact their business in the water industry and some of the key questions and challenges that each part of the business faces on regular basis, and the need to continuously develop and improve their business practices. They are therefore very interested in all aspects of sustainability, particularly how different companies can play a part in identifying smarter sustainability solutions.
   - Kieran noted that the questions and challenges faced are not just limited to UU but in fact other water companies would also have similar challenges to meet ever-increasing customer expectations.

- Kieran noted that he has a mandate from the UU Board to find answers for the many questions they have. He noted that conducting research can be a complex and a long process. Considering the School's wealth of experience UU felt the Horizon Group offered the best approach to find answers to the many questions they have. This will in turn benefit the School and the wider industry.

5. Research Presentations for the United Utilities Funding

- Jacqui reminded the group that a £30,000 grant had been offered by UU to fund research through the Horizon Group. A proposal document outlining this opportunity, along with the assessment criteria was issued previously. She noted that the successful project will be administered by the School, similar to the previously awarded research projects. Jacqui reminded the group that UU are particularly interested in innovation, to clearly show the novelty of what is being proposed.
- Four Academic Partners had expressed an interest in this opportunity, so the following four academics presented proposals. Each was given 15 minutes to present, followed by a 5 minute Q&A session. The presentations were as follows:

a. 1st Presentation – Prof Lian Lundy (Middlesex University)

- The title of the project: *Evidencing the UK water industry skills gap: enabling progress*
- This proposal addresses one of the risks and challenges that face the water industry, which is the need for a diversity of skills sets to provide innovative solutions. This research will address the skills gap. *More detail can be found in the attached slides.*
- It was noted that the work by Lian has some overlap with the work carried out by the Apprenticeship Special Interest Group.
- Kieran queried who does this research focus on – for example the Head Office staff, or the tier one contractor operatives etc? Lian noted that this work is a continuation of existing work with another water company that looks at the gaps in skill sets of the water company employees. However, the exact direction and focus of this research will be informed with input from UU as the project commences.
- Jacqui queried whether there may be any conflicts of interest with existing collaborators. Lian noted that this would not be the case as the water company she is working with is a partner of the 21st Century Drainage program, and the work is not company-specific.

b. 2nd Presentation – Dr Tony Parry (University of Nottingham)

- The title of the project: *Circular Economy Metrics.*
- This project focuses on measuring sustainability in an organization, particularly in the emerging area of Circular Economy. This project is considered important and

relevant to measure water industry performance against circular economy objectives. *More on this proposal can be found in the attached slides.*

- Laura queried what type of data will be used in undertaking this research. Tony noted that a combination of primary (most probably interviews) and secondary data (data obtained from water companies and other partners) will be used.

- Mohammad queried how much of the work will be subcontracted to Responsible Solutions as this was not clear in the slides. Tony noted that some elements of all tasks will be subcontracted to Responsible Solutions; they will also undertake the majority of the training element of this project as it is their specialism.

- Mohammad queried whether other School partners will be engaged in this project. Tony noted that partners from the Materials Leadership Group will be engaged in this project.

- In response to a query whether this project addresses behavioural issues towards sustainability, Tony noted that this is not the aim of this project, but having the right metrics in place has the potential to influence behaviours.

- Kieran queried what interaction this project may need from others that have not been factored in the proposal. Tony noted that the budget does not account for any contribution from UU or other parties. The requested budget only accounts for University of Nottingham and Responsible Solutions. Tony would expect contributions from other School partners towards case studies (e.g. interviews, meetings etc) might be a maximum of one working day per partner.

c. 3rd Presentation – Prof Mark Gaterell (University of Portsmouth)

- The title of the project: *Neighborhood scale visualisations of flood vulnerability and the management and resilience of infrastructure assets.*

- This project stems from the increasing risk of floods that threatens many parts of the UK. The increasing vulnerabilities need a new approach to address such hazards and risks, to develop and re-develop urban areas. Smaller scale visualisation of vulnerability and risk allows re-evaluation of infrastructure asset criticality. *More on this can be found in the attached slides.*

- It was queried what infrastructure this project is relevant to. Mark noted that at this stage this project only looks at water sewerage and drainage systems, but can be applicable to any infrastructure.

- It was queried what a typical case study site would look like. Mark noted that these are typically political, decision-making, or utility boundaries. The exact area needs to be agreed with the utility company to find an area of interest.

d. 4th Presentation – Dr Leonardo Rinaldi (Royal Holloway University of London)

- The title of the project: *the multiple accounts of value for water sustainability in the UK water industry.*

- This project aims to develop a holistic understanding of water sustainability, by determining the "value profile" of water sustainability for UU, its supply chain, the water users, the water regulator, local councils, NGOs, and the other UU stakeholders. *More on this can be found in the attached slides.*

- It was queried who would benefit from the project outputs. Leonardo noted it can be the government and local authorities and at a smaller scale, the supply chain. The aim is to have a common understanding of the value of water, which is currently contested.

- It was queried how is the School likely to benefit from this research. Leonardo noted that the provision of an e-learning module is an important outcome to help School members and the industry to have a better understanding of water sustainability.

6. Panel Discussion, Voting & Concluding Remarks

- After the presentations, group members were asked to identify their preferred projects. Jacqui requested members to consider and take into account the set assessment criteria when voting. Members were given three voting slips each, and asked to either distribute their votes, or allocate two votes to their preferred project. Presenters were not able to vote for their own projects.

- The following is a breakdown of the votes:

  - 1st Presentation – Middlesex University: **14 votes**
  - 2nd Presentation – University of Nottingham: **13 votes**
  - 3rd Presentation – University of Portsmouth: **5 Votes**
  - 4th Presentation – Royal Holloway University of London: **3 votes**

- Given they received the highest and an almost equal number of votes, the proposals from University of Nottingham and Middlesex University were identified as warranting some plenary discussion. Jacqui asked the two presenters to leave the room to allow for a short discussion on the voting outcomes. Some of the key points raised in the discussion were as follows:

- **Middlesex University:**

  - There were concerns on how this is going to benefit the School and the lack of clarity on the practical benefits of this project.

- The scope of the project appeared to be very large. It was noted that similar work is being carried out in this space.

- The project has applicability across the wider industry and not just the water industry, which makes the outcomes of the project transferable.

- The project needs to be clear in addressing what type of skills sets it seeks to address.

- It was noted that the industry has the tendency for people to move between job roles. This makes the skills gap analysis a very difficult process. It would be ideal for this project to tap into the area as it has not been addressed elsewhere.

- **University of Nottingham:**

  - *At this point Responsible Solutions' representative was also requested to step outside as they are named on this proposal.*

  - The project plan was very clear and shorter in terms of duration. The deliverables and benefits to the School were very clear and substantial. The practicality of the project was evident in the proposal.

  - Circular economy in the water industry is a very big topic and of great interest. There is not much work carried out in this area in the water industry.

  - Others expressed that similar work is being carried out in this area and the concern is that work could be repeated elsewhere. However, the practical outcome of this proposal was significant and relevant to the School.

  - This project can benefit not just the water industry but also the Construction Industry and there are increasing calls to address this topic. The transferability of this project is an important factor to consider.

- Following the discussion, Jacqui noted that the purpose of the meeting was to forward a recommendation to the School. Given the School's central role in this endeavour, Jacqui noted that such a recommendation would need to be ratified later in a meeting with Shaun, Jacqui, Kieran and Mohammad, when Shaun had returned to the UK.

- There was a suggestion by a group member to vote on the two shortlisted proposals. Jacqui checked whether everyone present was in agreement, and the overall majority supported this suggestion. A vote was carried out and the University of Nottingham's proposal received the overall majority of the votes (7 in total).

Middlesex University's proposal received only 3 votes. Jacqui abstained in both rounds of the voting.

- Jacqui noted she will recommend the University of Nottingham's proposal to the School, and a meeting will be held with Shaun and Kieran to ratify this decision.
    - **Post-meeting note:** a meeting was held on 21st December and *the Horizon Group's recommendation was accepted by Shaun on behalf of the School*.
- Kieran noted that he was pleased with the process undertaken today to present and select the winning project. Kieran wished to further develop this relationship with the group in future.
- Kieran noted that he is happy to forward the unsuccessful three proposals to his counterparts in other water companies, as these may be of interest to them. All three academics were pleased with Kieran's proposal.
- Kieran suggested sharing a document listing some of the key questions facing the water industry in the long term (30-50 years). There are also short-term questions directly relevant to United Utilities. These questions should steer research to be more industry informed *(see below)*.

7. AOB

- Laura expressed her gratitude and thanks to Jacqui for chairing the group over the last three years. Without Jacqui's leadership this group would not have reached its current level of maturity. Jacqui thanked everyone for their help and support in the last three years and wished Laura and Gareth all the best in chairing the group.
- Tony reminded the group of the offer for Industry Partners to sponsor MSc / MEng students undertaking their dissertations. Two MEng projects were successfully completed so far. Tony is interested to seek further opportunities with Industry Partners in sponsoring more projects. Project titles are offered in March 2017. ***Those wishing to sponsor MEng projects students should contact Tony Parry*.**

Actions:

- **Mohammad** to circulate the meeting slides and Kieran's list of questions.
- **Industry Partners** that are interested in sponsoring MSc / MEng projects at University of Nottingham should contact and liaise with Tony Parry directly.
- **Mohammad** to invite Liz Holford for a future meeting to provide the group with a short update / presentation on the FIR project.

Next meeting

- **Date**: Thursday 30th March 2017, 1pm – 4pm
- **Venue**: TBC

Appendix: Questions from UU

Big questions that water companies need answers to

Document purpose

- To set out questions that United Utilities need innovative solutions to.
- Some are more urgent than others
- Some will already have teams of people working to resolve them

Customer

- How do we understand the service customers want to see (appointment times, response times, information updates)
- How do we provide appointments when our customers want them?
- How do we achieve zero customers in water poverty by 2030?
- How do we get customers to value water as a precious resource?
- How do we understand water use in detail?
- How do we change behaviour to protect resources and services?
- How do we understand the communities in which we operate?

Wastewater

- How do we eliminate unplanned escapes from our sewer network? (Zero Pollution, Zero Flooding)
- How do we ensure 100% compliance with permits? Zero failure environment?
- How do we make wastewater treatment odour neutral?
- How do we sustainably remove surface water from our systems?
- How do we enable the proliferation of SUDs through local planning authorities?
- How can we truly understand the behaviour of our networks?
- How can we understand the dynamic, live view of performance?
- How can we warn customers of events before they happen?
- How do we develop a geospatial approach to systems planning and management?
- How do we achieve 'catchment systems management' to deliver outcomes?
- How do we ensure our service is resilient?
- How do we centralise our service?
- How do we fully optimise our asset management and maintenance activity?
- How do we eliminate sewer misuse?
- How do we use tariffs to change behaviour, e.g. surface water management?
- How do we change manufacturers labelling? Use of PHS? Phosphate?
- How do we change the personal use of PHS e.g. microplastics, ibruprofin, tryclosan etc.?
- How can we leverage benefits through partnership working with other emergency responders / utilities?

Bio-resources

- How do we become carbon neutral by 2050?
- How do we turn all the wastes we receive and generate into products by 2030?
- How do we maximise the energy production from our waste?
- How do we balance sludge production across the wastewater system to optimise gas production?
- How do we optimise the efficiency of the asset base?

- How and where do we enter new markets?
- How do we guarantee access to our land bank?
- How do we gain access to land bank further afield?
- How do we overcome permitting barriers to co-digestion?
- How do we minimise the environmental impact of our recycling service?
- How do we guarantee the quality of our sludge product?

Water Resources

- How do we create a national water grid?
- How do we create value from our reservoirs not currently used for public water supply?
- How do we fully understand the value / cost of our resources?
- How do we really maximise the natural capital value of our catchment land?
- How do we promote and proliferate biodiversity?
- How do we manage our catchments to protect downstream communities from flooding?
- How do we ensure our assets are resilient, especially to climate change?
- How do we halve our abstractions by 2050?
- How can we understand the dynamic, live view of levels, performance etc?
- How can we warn customers of events before they happen?
- How do we develop a geospatial approach to systems planning and management?
- How do we achieve 'catchment systems management' to deliver outcomes?
- How do we fully optimise our asset management and maintenance activity?
- How do we eliminate chemical use from our treatment and supply chain?
- How do we manage 'abstraction reform'?

Water

- How do we halve the UK's water requirements by 2040, by working with consumers and manufacturers as well as minimising leakage and waste?
- How do we achieve zero leakage by 2040?
- How do we have a live, dynamic view of network performance, including losses 100% of the time?
- How do we proliferate innovative no dig techniques to repair leaks and burst without the customer losing service or pressure?
- How do we achieve zero interruptions to water supplies by 2050?
- How do we really get a NCV underpinning our leakage target?
- How do we get 100% meter penetration?
- How do we optimise or vary tariffs to incentivise behaviours?
- How do we proliferate AMR and so that we can get a near real time view of usage?
- How do we get customers to value water sufficiently to change behaviour?
- How do we ensure 100% compliance with requirements 100% of the time?
- How do we create a 'food stuffs' quality control philosophy at our treatment works?
- How do we ensure water quality at the customer's tap?
- How do we eliminate chemical use from our treatment and supply chain?
- How do we optimise the efficiency of our integrated network?
- How do we minimise energy costs?
- How do we maximise energy production and self generation?
- How do we balance exports and bulk tariffs with internal costs?
- How do we ensure that our service is resilient?

- How can we leverage benefits through partnership working with other emergency responders / utilities?
- How do we guarantee raw water quality through SLA's with internal and external providers?
- How do we eliminate public health risks from 3rd party water providers?

People

- How do we optimise our efficiency? That is – get more output from the same human
- How do we get the right person doing a job?
- How do we optimise the use of our business experts?
- How do we provide a truly 24/7 service and eliminate overtime?
- How do we resolve the problem of aging workforce with information trapped in people's heads?

Other stuff

UKWIR website
Some water companies publish their challenges – recommend you look at Welsh/ Dwr Cymru, Anglian and Severn Trent websites