

Summary

In March 2019 the Bristol ULL team completed three half-day workshops for small groups of targeted stakeholders from each of the sector groups (WP2). These workshops built on the work carried out in Yr 1 Qtrs 1-3, which were primarily concerned with: a) setting up the international consortium, b) setting up the Bristol ULL; c) undertaking stakeholder analyses with project industry partners, and d) planning and preparing the workshops.

A critical first step in our impact planning work (WP5) was the initial discussions with our industry partners - Centre for Sustainable Energy, Bristol Food Network and Wessex Water/GENeco – around likely focus areas and, more specifically, the key linked stakeholders, who they are and what their primary aims are, their interests, their level of interest, their influence and level of influence.

Stakeholder	Interest H/M/L	Description	Influence H/M/L	Notes on interest and influence
Key Sector Policy-makers + Regulators				
?	?	?	?	?
Food Waste Stakeholders				
Waste and recycling collection				
GENeco	H	Principal waste management company focussed on collecting food waste for reprocessing into biogas and soil improver is GENeco, (a subsidiary of Wessex Water) which is based in Avonmouth.	H	Wessex Water (and their parent company, YTL) are a very significant infrastructure operator and service provider in this space so have clear influence, and through GENeco and other sustainability initiatives (e.g. involvement on the Bristol Green Capital Partnership, voluntary partnership in this project) have demonstrated significant interest in the aims and objectives of the research project. GENeco (with Wessex Water) are a partner on the consortium and therefore are ideally placed to act as the main target actor in this waste and recycling collection group. They also overlap almost completely with the water and energy focus areas.
Vegeware, Olleco	H	Others offering food and waste oil collections	L	It is important that we keep these organisations in mind and invite them to stakeholder events, not least as they may be part of the innovation mix.
Bristol Waste Co.	H	Wholly owned by Bristol City Council, it's charged with waste and recycling collections including food waste recycling. The company is primarily focussed on improving Bristol's recycling. The scheme is operated by Bristol Waste Company (BWC) and the food waste collected is used to generate biogas and soil improver at GENeco. Data from 2016/17 shows that food waste collected represented 1.18kg/hh/yr, second only to Cardiff, within the core cities, who collected 1.83kg. A recent campaign by BWC to increase food waste recycling has been very successful and the company plans to build on this success in the coming years. BWC undertake annual waste audits of household residual waste which categorise food waste by avoidable and unavoidable food waste. This is valuable data that can be used to measure the success of work undertaken to reduce household food waste.	H	BWC is actively engaged with networks in the city. Bristol is already a high achiever in terms of household waste. It is one of only 4 out of the 8 Core Cities to have introduced a household food waste recycling collection. Alongside GENeco, BWC is the other main actor in this group so could perhaps be included in the valuation work as well. Given their food waste is processed at GENeco anyway, and given very limited local authority resource at present, it seems sensible to focus on GENeco.
Waste and recycling collection				
<ul style="list-style-type: none"> • FareShare South West • The Trussell Trust • The Matthew Tree Project • FoodCycle • Gleaning Network 	H	Community-based organisations tackling food redistribution with strong emphasis on relief of food poverty. FareShare SW distributes edible food to a wide network of over 150 community-based groups and organisations across Bristol and the South West.	L	As with Vegeware and Olleco, these organisations are important and should be invited to take part in the wider Urban Living Lab conversations in this area.

Fig 1: Example section of one of our three stakeholder analysis worksheets; this from the food worksheet

These stakeholder analyses enabled us to target key knowledge holders for the workshops and also produce basic graphical illustrations of each of the system areas for the city region – see Figs 4-6 below - which were used to communicate to stakeholder groups to the problem space.

Fig 2: Bristol's key food actors - preliminary draft

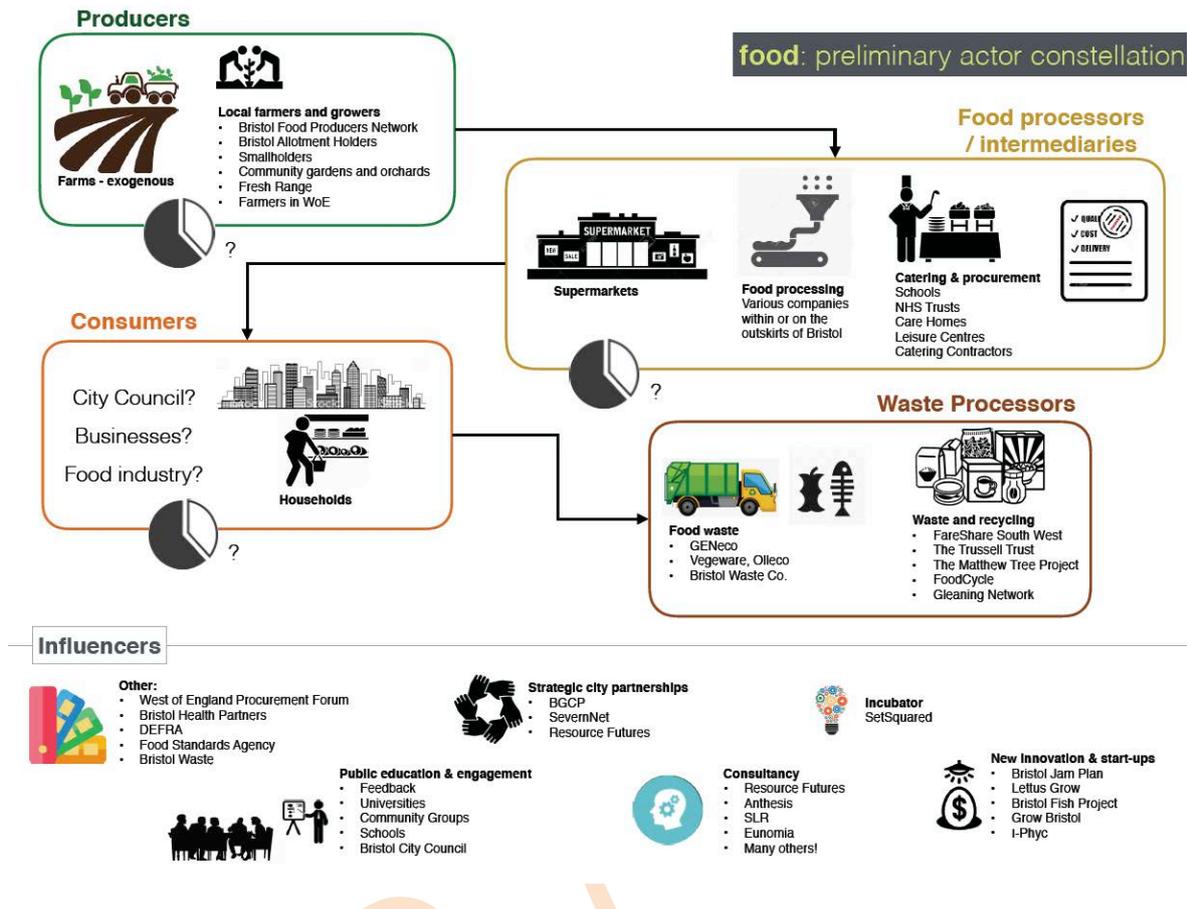


Fig 3: Bristol's key energy actors – preliminary draft

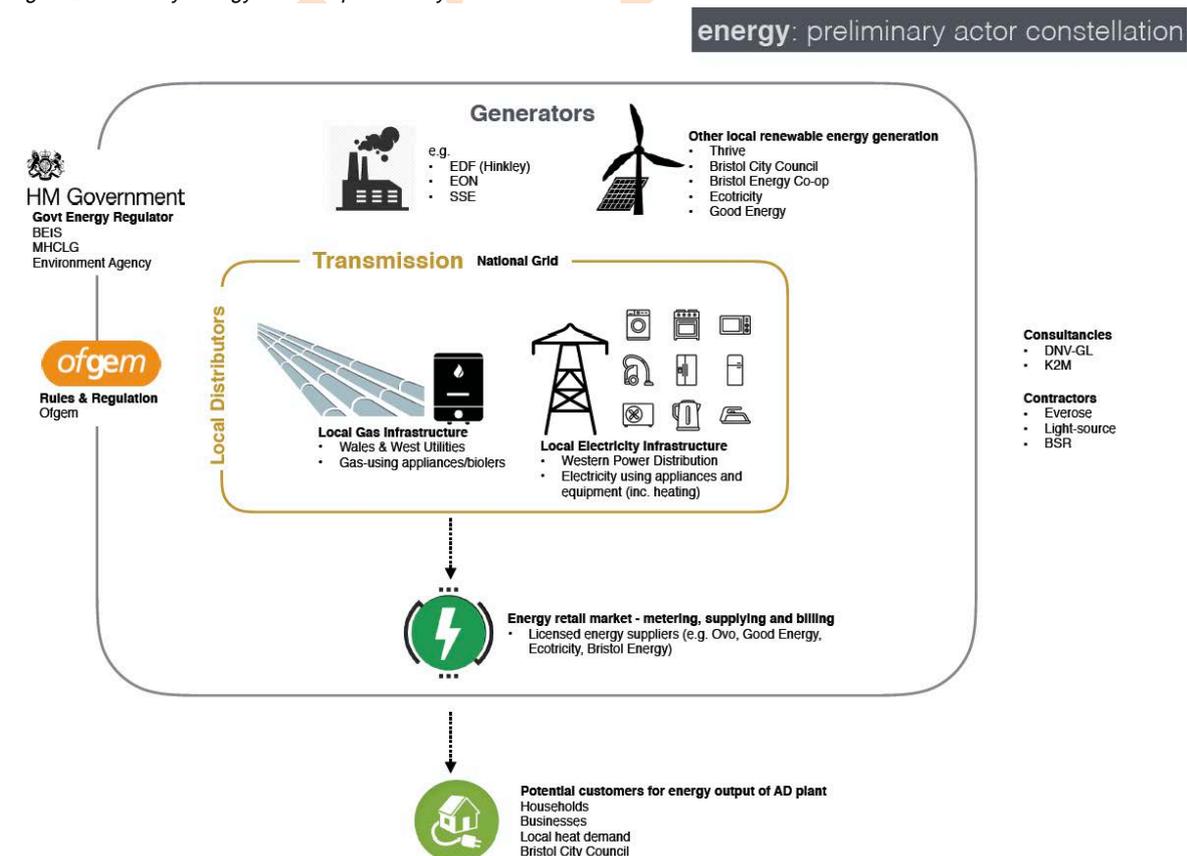
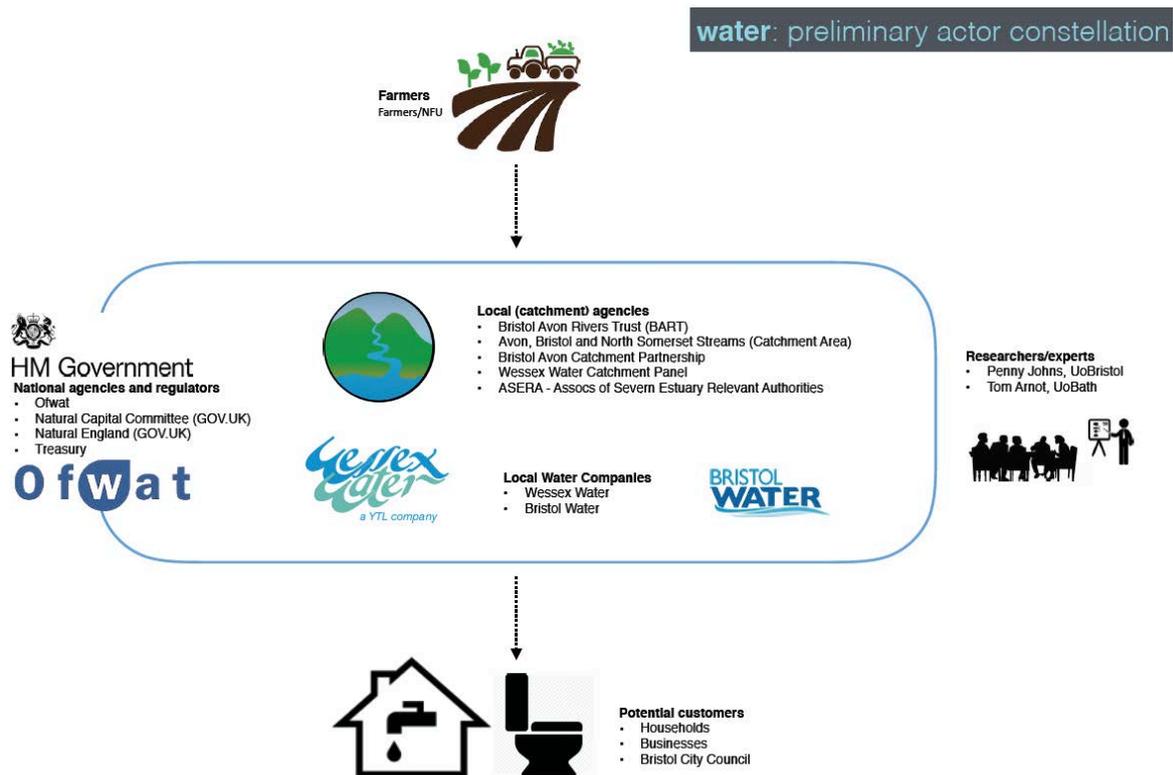


Fig 4: Bristol's key water actors – preliminary draft



These graphics are not comprehensive models of the system and all its myriad interactions, but simple graphical presentations of key actors in each system according to our industry partners to be used as communication material for the purpose of the workshop and reporting. That said, they did highlight some interesting comparisons between the energy and water systems on the one side and the food system on the other, namely:

- Compared with the food system, the energy and water systems have fewer, larger actors (e.g. large-scale, privately controlled infrastructure)
- The energy and water systems also place government (e.g. BEIS, Treasury) and regulators (Ofwat, Ofgem) up front, whereas there is less clear national level governance influencing the food system (this may simply be due to interpretation of the industry partners, and we explored this in the workshops)

A further discussion in these initial ULL development meetings was around scope and boundaries of each of the systems – see Fig 5. Ian from the Schumacher Institute flagged early on that it may be more appropriate, given our resource constraints and the natural emerging focus of the project, to consider one system comprehensively (e.g. food has seemed perhaps the obvious choice for Bristol), then at the overlaps between that system and the other two. Further discussions of options revealed a sequence of steps towards that as a possible eventuality, as shown in Fig 6 below.

Geographic scopes

Energy - mainly local to GENeco

- Headline decarbonisation focus: green gas
- GENeco plant efficiencies (regulation)
- Avonmouth heat network (gas from food waste to local homes)
- Transportation (of food waste to/from site)

Food - city-wide and further

- Headline food waste focus: households then processors
- Household collections
- GENeco plant (potential for composting)
- Food processors in city hinterland
- Composting city wide

Water - city sewage + water catchment

- Phosphorous in sewage
- Food waste collections
- EA water quality requirements
- Farmers / upstream pollution

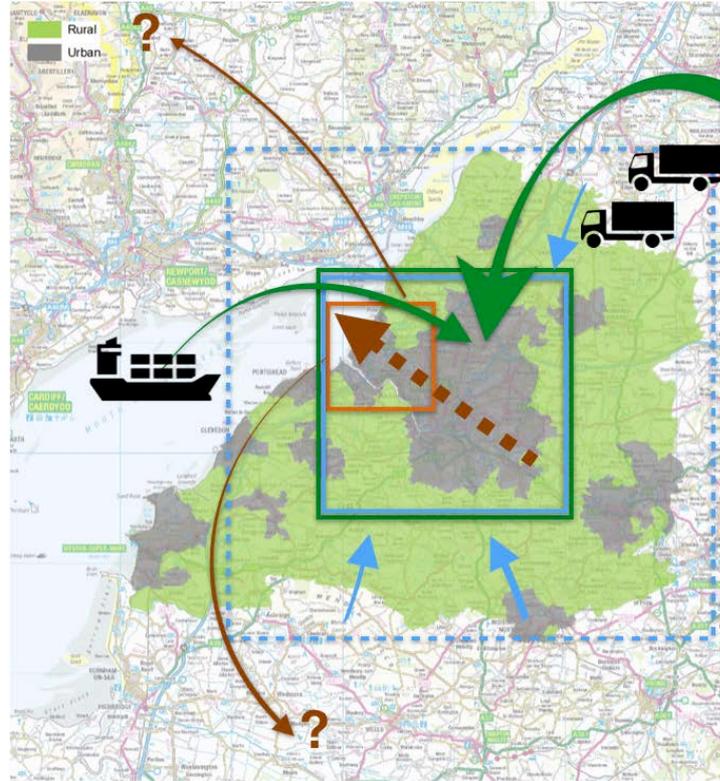
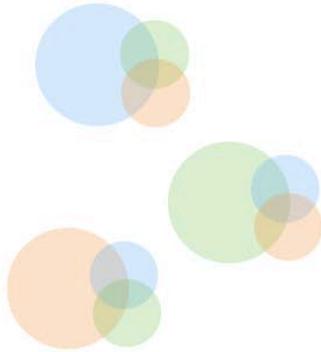


Fig 5: Graphic illustration showing early discussions of likely boundaries for each of Bristol's systems

Option 1 - Three systems separate (shallow, but targeted):

Same as option 2, but with with different process...could lead in to Options 2 or 3



Pros:

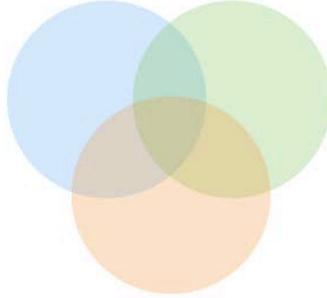
- Good understanding of whole FEW Nexus
- Can consider wider infrastructure and systems
- Though more superficial, it provides a richer picture of complexity, which ultimately could be more impactful
- Water and energy actors are significant players, offering potential for significant impact

Cons:

- Resourcing may be an issue
- Due to complexity, may only allow only superficial consideration

Option 2 - Three systems together (shallow dive):

Consider all three systems together



Pros:

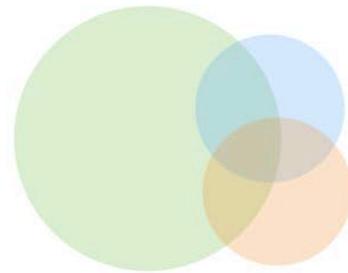
- Better understanding of whole FEW Nexus
- Can consider wider infrastructure and systems
- Though more superficial, it provides a richer picture of complexity, which ultimately could be more impactful
- Water and energy actors are significant players, offering potential for significant impact

Cons:

- Resourcing may be an issue
- Due to complexity, may only allow only superficial consideration

Option 3 - One system focus (deeper dive):

Choose one system (food, energy OR water) to consider in its entirety, then narrow overlapping areas from other two systems



Pros:

- May suit resourcing better (both limited total resource and differentiation between local partners)
- May suit focus on food waste and GENeco plant, and linked energy focus
- Focus on food arguably most endogenous and potentially impactful?
- Allow much deeper dive in to one system

Cons:

- May not suit other partners
- Limits understanding of whole FEW nexus
- Focus on Avonmouth limits wider consideration
- Local food actors identified constitute only a small percentage of total (so potentially less impactful)

Fig 6: Three early options for how to consider three systems given resource constraints, which in fact revealed a sequence of three steps

The input from those who attended the workshops was very high quality, thanks to the significant expertise that they bring from key target areas, but also the excellent facilitation (by Jana Fried from UoCoventry and Richard Nunes from UoReading). Numbers were small to the workshops individually, but we were not aiming for large numbers as we were aiming to cover as much ground as possible in a short space of time and with targeted knowledge holders. This approach is in marked contrast to many other approaches to engagement, which in our experience tend to open it out as wide as possible without any clear strategy for who is being involved and why. Around 50% of those we identified for the energy workshop came, and only 25% for the food and 20% for the water workshops. The primary excuses given by those who said they could make it then did not come were to do either with Brexit, or end of year accounting. We will follow up with these individually once we have processed the data collected from the workshops. All together, we had a decent number that attended and a good deal more who are on our target list and with whom we can follow up. While by the 11th/12th hour (!) it felt energy levels were waning, that should not take away from an otherwise highly engaged and fun series of workshops.

The workshops have opened the challenge space out again, which does carry with it a risk in terms of our resource, and there's a good deal of work to be done in bringing it all together, but these discussions have enriched our understanding of the problem space substantially. We are planning one further first phase workshop to take place in 3-6 months time, this time bringing all three sectors together, as well as opening it out further to a wider audience.

Next steps

Key actions going forward and prior to the September Rotterdam conference are:

1. Completion of **preliminary systems mapping** (actors, decision processes, influence and causal loop diagrams) – led by Schumacher Institute in consultation with full Bristol ULL team
2. **Agreeing focus areas** and identifying data requirements (May 2019)
3. **Sourcing key data** sets (May-July)
4. **Economic valuation** – is it possible to develop high level valuation examples before Rotterdam, both macro-economic as well as social valuations?

Issues & Risk Management

Risk	Description	Mitigation
<i>PhDs & Resource Flow Dynamic Modelling</i>	<i>The resource flow dynamics modelling has been delayed due to limited number of PhD applications. This affects multiple ULLs, not just Bristol. The Bristol ULL team needs to discuss how it will resolve and link to the economic valuation and impact work going forward</i>	TBC
<i>Communication and integration across UK partners about Bristol ULL</i>	<i>Having so many involved in the UK research team is both a strength and a challenge. It brings in multiple perspectives and areas of expertise, which is so important for this trans-disciplinary research, but it has also been posing a challenge for operationalization and communication of the workshops in particular</i>	<i>Concerns were flagged early enough so that the various strands could be brought together and the workshops were a great success so there has been no negative impact on the project, nor delays.</i>

due to: 1) geographic spread (Bristol, Coventry, Reading); 2) limited resources; 3) the developmental nature of the research (i.e. limited detail up front). In order to make best use of people's time we initially sought to bring team members in only when necessary, but in hindsight that resulted in lack of clear communication when trying to coordinate the workshops.

Going forward therefore we are scheduling monthly meetings open to all UK team members, rather than just the Bristol-based members.

Update on stated tasks

Key consortium objectives related to Yr 1 and first round workshops/stakeholder engagement:

- Formally 'open' each ULL, with stakeholder groups – *[done]*
- Co-create with ULL stakeholders an understanding of resource inefficiencies (by sourcing data, mapping waste streams and agreeing focus areas) – *[partially complete/to follow up with interviews]*
- Agree likely pathways to impact in each context – *[still in development; should know more by end of the quarter]*

Specific stated objectives of WP2 (ULLs Stakeholder engagement and co-creation):

- Co-production of engagement methodology across all ULLs - *[international knowledge exchange not yet started]*
- Confirmation of approach with knowledge brokers and industry partners at ULL inception *[partially done; still in development]*
- Identification of 1-3 specific focus areas per ULL for in depth assessment - *[still in development; should know more by end of the quarter]*
- Identification, analysis and sourcing of data - *[not yet started; should know more by end of qtr]*
- Development of indicator-based assessment methods - *[not yet started]*

Stated description of work in WP2:

Agreement of:

1. Focus areas
2. Methods
3. Data identification
4. Next steps
5. Sourcing of data