C40 Cities

The initiative

C40 Cities links 97 of the worlds greatest cities to drive climate action. This represents a quarter of the global economy, with the Mayors of these Cities committing to take bold climate action, delivering on the goals of the Paris Agreement, both at the local level and globally.

Governance

Cities have complex governance structures, which employ a variety of measures to deliver on climate action and embed circular economy practices.

ARUP's 2015 "Powering Climate Action" report maps the interaction between *"the powers that city governments hold, the governance and decision making structures, and the actions they take in tackling climate change"* and in promoting and embedding circular economy practices.

Figure 1 illustrates how city institutions can influence the execution of circular economy practices. The political context and government structure of a city can define its governance approach from an institutional perspective. The delivery route through which governance is performed reflects the type of "Power" that a city chooses in order to execute governance. ARUP define this characteristic as four main dimensions of power. The city's assets, such as infrastructure and its functions, like promoting economic development are examples of the resources through which a city can exercise power. Four main levers are employed to deliver change within a city.

The adoption of circular economy practices within many C40 cities is likely to be influenced by their government structure, political context, their governance and delivery infrastructure as well as their delivery routes and partners. ARUP distils this interrelationship into six typologies to demonstrate how governance, as opposed to "power" colours a city's capacity to act on circular economy and climate change.

Table 1: Six typologies of power - city governance

Commanding Cities	Implementing Cities	Providing Cities
Regulation and enforcement / small role for the private actor	Takes actions through project and programme delivery / without input of private & other actors	High level of control over service delivery using influence to take action
Legislating Cities	**Collaborating Cities**	**Facilitating Cities**
Sets policy and legislation that require others to act	Acts in partnership with other actors to leverage their unique powers	Cannot take direct action therefore creates attractive environment for others to act

Urban Circular Economy Governance Pathway

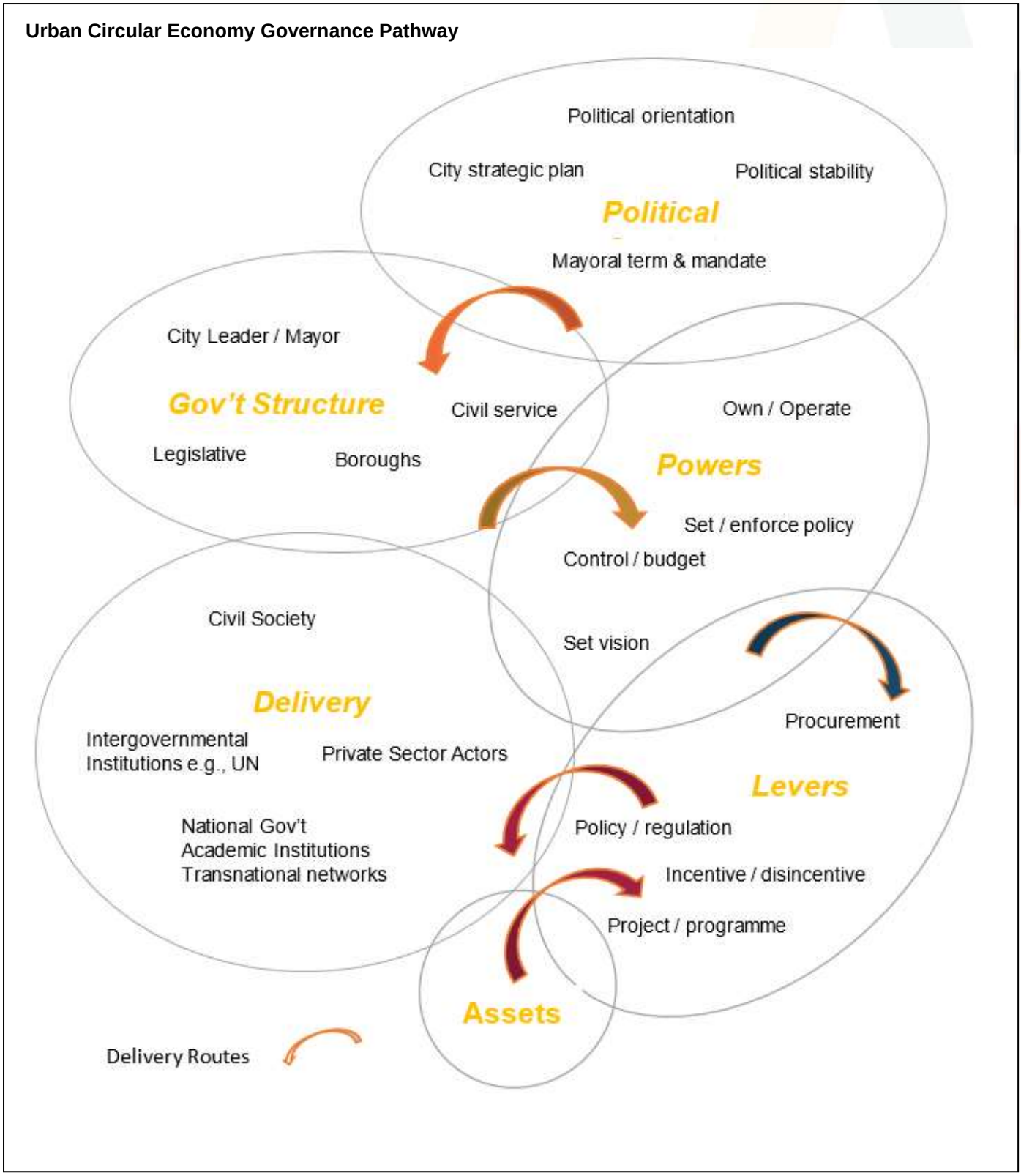

Figure 1: Adapted from the Urban Circular Economy Governance Pathway.

2020 Campaign

The first day of the 2020 campaign coincided with the imposition of the second national lockdown in the UK, which saw that C40 Cities with a governance that enables collaborative working with other partners, including actors from the private sector and community groups and networks, have been more successful in delivering climate action and circular economy practices than those with other profiles.

Below is an example of how C40 Cities can raise awareness of circular economy opportunities, build capacity for innovation and find solutions to obstacles. The campaign benefited from a growing number of organisations signing up to learn how a circular economy can work for them and their communities.

Copenhagen

Aim
Copenhagen's circular economy aim is to be the world's first carbon neutral city by 2025.

Context
Denmark's adoption of a circular economy was constrained by non-financial barriers that served to both limit scale-up and hold back the pace of implementation. Key barriers included unintended consequences of existing regulations. Examples being:

- Definitions of waste that impeded trade and transport of products for remanufacturing
- Market failures such as imperfect information, and routes for business to repair, disassemble and remanufacture products
- Social factors such lack of experience among companies and policymakers and inability to capture circular economy opportunities

The city's goal is to become a circular economy leader by tripling the amount of goods re-used by municipalities. The city also plans to reduce its CO_2 emissions by 59,000 tons by 2024, which equates to recycling 70% of all municipal waste. The project commenced in January 2019.

Approach

The City of Copenhagen had to create collaborative working relationships with both privately held companies (such as Carlsberg) and public bodies, to establish a regulatory framework wherein a new waste and resource plan must be made every six years. The city engaged in dialogue with the Danish Environmental Protection Agency during the preparation of the plan with the expectation that the national waste plan contained elements of the EU's circular economy package.

In executing the national waste plan, the City of Copenhagen plays a lead role in terms of implementation.

Initiatives in six themes

The circular Copenhagen plan contains a number of initiatives that fall under six themes:

1. Initiating waste sorting information campaigns (ca. 8,025 tons CO_2 reduction)
2. Improving waste collection methods and implementing source separation (ca. 2,550 tons CO_2 reduction)
3. Stimulating reuse and exchange aiming to see the city reuse 5,880 tons of waste (ca. 240 tons CO_2 reduction)
4. Promoting a circular economy aiming to further improve collection of household waste for recycling by 6% (ca. 3,410 tons CO_2 reduction)
5. Improving commercial waste recycling, improving collection of commercial waste for recycling by 15%
6. Integrating new technological solutions for waste treatment aiming to sort household waste for recycling by 6% (ca. 25,150 tons CO_2 reduction)

In line with these themes, the Circular Copenhagen Plan aims to stimulate innovation with specific actions.

Actions

1. **Establishment of a dedicated innovation platform:** consisting of industry professionals, innovative businesses, and researchers.
2. **Delivering a test facility for plastics sorting:** The City of Copenhagen's facility that is open to businesses as well as researchers.
3. **Testing new waste collection technology:** Waste collection was primarily carried out by waste trucks running on natural gas or biogas. Electric vehicles, autonomous vehicles and small electric vehicles are being employed to reduce noise and air emissions.
4. **Establish a biogas plant:** A longer term benefit may be that future bio-refining projects could contribute to a circular economy, for example producing plastics, proteins and biogas from biowaste.

Challenges

The publication “Circular Copenhagen Resource and Waste Management Plan 2024” details six challenges to which solutions were delivered.

The key challenge has been building an ecosystem that contains information and infrastructure to support waste source separation. The quality of the source separation (collecting as pure fractions as possible) is crucial to the final recycling and upcycling of resources. A further challenge has been creating new solutions, which demanded systematic preparation in constructing an ambitious and feasible plan, and mapping specific risks and challenges for each initiative to manage those risks during implementation.