

# Smart Energy for the World: The Rise of a Technonationalist Discourse in Japan in the Late 2000s

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## Abstract

In recent years, “smart city” has become a buzzword in discussions about urbanisation. While in Europe and North America the initial utopian optimism has now receded, due to booming implementation costs and surveillance concerns, the smart city model has taken root in rapidly urbanising Asia in particular, thanks to the activism of China and Japan. For the latter, smart city technologies and technical know-how represent the new frontier of export goods. In April 2018, the Government of Japan and that of the Socialist Republic of Vietnam announced the construction of a new smart city on the outskirts of the Vietnamese capital Hanoi that is set to become Japan’s largest ODA project to date. Despite changes in the global hegemonic narratives on smart cities, the new project bears the features of an urban settlement that revolves around technological data collection for the sake of perfect efficiency, rather than for its prospective inhabitants. Against this backdrop, how did the Government of Japan succeed in constructing a convincing narrative for made-in-Japan smart cities? Since 2011, thanks to specific initiatives by Japan’s government and investments by Japanese tech companies in the sector, a Japanese discourse on smart cities has emerged. Through an examination of earlier critiques of the smart city model and a close analysis of official policies and books by energy policy intellectuals, this paper will identify the main features of the Japanese discourse on smart cities and place it in the context of an evolving broader global narrative. The study demonstrates how the Japanese discourse on smart cities largely reflects a corporate managerial vision of the city and, at the same time, a “technonationalist” approach that informs the country’s foreign policy.

**Keywords:** Japan, smart cities, information and communication technologies (ICT), energy diplomacy, foreign policy, technonationalism, discourse

## 1. Introduction

In recent years “smart city” programmes and initiatives have appeared across the world. While in Europe and North America the initial utopian optimism seems now to have succumbed to booming implementation costs and over-

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whelming surveillance concerns,<sup>1</sup> the smart-city paradigm has taken root in East Asia especially, thanks to the activism of China and Japan.<sup>2</sup> In particular, the latter has fostered cooperation agreements with other regional actors on smart-city projects. For an export-dependent country such as Japan, smart-city technologies and technical know-how represent the new frontier of export goods. In April 2018, the government of Japan (GOJ) and that of the Socialist Republic of Vietnam (Vietnam, hereafter) announced the construction of a new smart city on the outskirts of the Vietnamese capital Hanoi, which is set to become Japan's largest Official Development Assistance (ODA) project to date.<sup>3</sup> A few months later, during Japanese Prime Minister Abe Shinzō's visit to Beijing in October 2018, China and Japan agreed to cooperate on a number of infrastructural projects including a "smart city" in Chonburi province in Thailand, not far from the capital Bangkok.

In light of these facts, the concept of *machi-dzukuri* ("city building"), which has been at the centre of Japan's international cooperation activities since the 1980s (JICA 2008), has acquired new significance. Despite the relative loss of their world-market share in core sectors for smart-city construction, such as electronics, heavy industries and car manufacturing, Japanese companies have been able to advance their technologies and know-how abroad, while profiting from tax cuts and subsidies domestically, along with incentivised urbanisation schemes and foreign aid abroad (Berndt 2018). As the above-mentioned smart-city projects show, however, despite a fundamental lack of clarity regarding the very definition of "smart city" (Joss et al. 2019), this public-private coalition has been successful in building a specific narrative reflected in government policy papers, statements, state-sponsored events and essays. Against this backdrop, this paper will address the following research questions: What kind of ideas and concepts are associated with the smart city in Japanese discourse? What kinds of models has the GOJ built and presented, at least at the level of public narratives, to project a convincing story?

Thus far, a consistent part of the academic literature on the "smart city" has struggled to provide a definition of the concept itself, though it commonly highlights the importance of technology in the attempt to improve the city-

1 See e.g., Greenfield 2012, 2013; Poole 2014; Sterling 2018; City of Boston 2019.

2 Since 2011, following the approval of the 12th Five-Year Plan aiming at reducing carbon emissions by 17 percent per unit of GDP by 2015, China has launched dozens of smart-city projects. China is today the country with the highest number of pilot projects (Tokoro 2016).

3 According to the Nihon Keizai Shimbun (2018), the project has an estimated value of 37 billion dollars. It entered its first phase in late 2018 after the Vietnamese government granted permission for foreign investments and it is due to be completed in 2023. It is being designed by Nikken Seikei and will feature 7000 condo facilities and commercial activities. The smart town mobility system will be managed by self-driving buses and charging stations for electronic vehicles provided by Mitsubishi. All houses will be furnished with solar panels and food waste recycling equipment, smart appliances for energy conservation and smart meters, supplied by Panasonic and KDDI, to gauge energy consumption. Daikin Industries will supply air conditioning in the complex. Japanese group Aeon will open groceries and supermarkets in the area. In addition, 3000 cherry trees will be planted in green areas.

dwellers' quality of life.<sup>4</sup> More recently, scholars have focused on global narratives and discourses regarding the smart city. In his review of smart-city projects around the world, Tokoro (2016) identifies a dozen keywords such as “smart grid”, “recyclable energy”, “urban development/redevelopment”, “next-generation transport system” and “environment protection” (Tokoro 2016: 3).

At the same time, authors such as Greenfield (2012, 2017), Townsend (2013) and Holland (2015) have problematised the role of major global tech companies in the diffusion of the smart-city model, contending that this transition has led to the privatisation of public goods and spaces. Linked to this critique is the argument, based on a close analysis of official documents issued by regional organisations such as the European Union, that points to a fundamental absence in smart-city projects of a bottom-up citizen-centred perspective (De Waal / Dignum 2017, Engelbert et al. 2019) and attention to social issues such as social inequality and urban violence (Gonella et al. 2019). Specifically in the Japanese case, DeWit (2014, 2015 and 2018) clearly shows the revolutionary potential of the GOJ's smart city and smart community programme in terms of the decentralisation of Japan's energy sector and the revitalisation of local economies (cf. in particular DeWit 2014), while still underscoring the lack of citizen participation in government-sponsored smart-city projects in Japan (DeWit 2013, Samuels 2013).

## 2. Historical “disjunctures” and the rise of discourse coalitions

In light of recent developments in Japan's international cooperation regarding smart-city projects in developing Asia, it is worth analysing how this idea has been discursively framed by relevant policymaking actors in recent years. It is assumed that this articulation has taken place in response to a critical juncture in Japan's recent history: the 11 March 2011 tsunami and Fukushima nuclear disaster, the adoption of the UN Sustainable Development Goals framework and the signing of the Paris Agreement in 2015. The first event was instrumental in re-orienting Japanese domestic policies in the field of energy and environment. The second historical phase has been crucial to enriching existing policies with new, and possibly more attractive, ideas and concepts.

At the basis of this assumption is the belief that specific historical processes, events, crises and “disjunctures” are a key part of the development of specific hegemonic narratives at the national and transnational levels (see Jessop / Sum 2013: 130, Samuels 2013). The Cultural Political Economy (CPE) approach developed by Jessop and Sum provides a suitable approach in

4 See Mahiznan 1999, Caragliu et al. 2009, Washburn et al. 2010, Guan 2012, Nam / Pardo 2012, Albino et al. 2015.

this sense, as it focuses on the correspondence between “imaginaries” and “real material forces in the existing international political economy”. At the foundation of this approach is the idea that economic systems and the relative set of regulatory political institutions are not the product of mere rationalism (economism). Rather, they are the product of social relations that emerge from specific institutional arrangements and historical as well as geographical conditions (Jessop / Sum 2006a: 4). In fact, what matters here is “the interaction between the discursive and extra-discursive that gives relatively successful economic and political imaginaries their performative, constitutive force in the material world” (ibid.: 158). Consequently, any shift at the level of discourse reflects a shift in the “material apparatuses” and “social practices” consolidated in a given context, e.g., that of global neoliberalism.

In addition, the CPE approach stresses that hegemonic narratives are the product of a multi-scalar process of adaptation and negotiation among “actors with different horizons of action” (global, national, regional, etc.). In this process, the role of “sub-hegemonic nodes” is fundamental. These are the actors developing appropriate “technologies of power” that “anchor” globally hegemonic discourse to a regional or local level, and which might even contribute bottom-up to the emergence of new discourses. Their success depends on their ability to “absorb alternative meanings and marginalise resistances”, and therefore on their capacity to “adapt to more global or local circumstances” (Jessop / Sum 2006b).

In particular, this study aims to analyse the emergence of epistemic communities or “discourse coalitions”, i.e., groups of actors sharing a common definition for “ambiguous social circumstances” and trying to impose their views on others through diverse means, including “manipulation and the exercise of power” (Hajer 1993: 45). In the case study presented here, the smart city is interpreted as a storyline around which different actors (governments and private companies) formed a coalition in order to impose a certain “view of reality”, and at the same time, to advance their specific interests by suggesting new social practices and arrangements. In particular, this ideational convergence revolves around the idea of a “technological nation”, valorised as such after a series of traumatic events (the disaster of March 2011), that is based upon a “romantic interpretation of history” that nonetheless guides the formulation of public policies (Charland 1986: 197). From a policymaking perspective, this projection of a national identity is arguably necessary in the attempt to establish a (sub)hegemony.

Through a review of public documents and the Japanese literature, this paper will shed light on the discursive interactions between the policymaking arena and a number of energy-policy intellectuals and examine how the smart-city model has been framed as a “storyline” able to provide a solution to a specific issue or a number of issues. Specifically, the entry point for this re-

search is the Ministry of Foreign Affairs of Japan (hereafter, MOFA) set of policies labelled “energy diplomacy”. An analysis of these policies is presented in the final part of the paper. Energy is among the top MOFA priorities, given the ministry’s task to contribute to national security through diplomacy and international cooperation. Assuming the existence of a network of entrenched relations among ministries and government agencies, this paper aims at describing the Government of Japan (GOJ)’s energy policy shifts in the last decade and the agency of experts and energy intellectuals, particularly after the historical disjuncture of March 2011. To this end, we have conducted a content analysis of the work of influential energy experts and GOJ energy and innovation strategies before and after the Fukushima nuclear incident. Focusing on keywords and recurrent themes, the study underscores paradigm shifts (albeit partial) in the public and official discourse on energy and environmental sustainability, and, consequently, the inclusion of such themes in foreign policy.

### 3. A new imaginary of the city

In 2018, 4.2 billion people lived in cities – approximately 55% of the total world population. By 2050 the ratio will increase to 68%. Today 70% of global wealth is produced in cities. However, urban areas are also responsible for more than half of total global energy consumption and waste production, with dramatic consequences for the natural environment (Van Beurden et al. 2019).

In its effort to promote sustainable development and tackle the current environmental crisis, particularly after the launch of the Sustainable Development Goals (SDG) in 2015, the UN has integrated the concept of “smart city” into its policy guidelines regarding urban development. Since the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) held in Quito in October 2016 and the adoption of a New Urban Agenda, the concept of “smart” has been consistently associated with that of “sustainable”. However, despite the general vagueness of this new model of urbanisation, official definitions stress the importance of the use of information and communication technologies (ICT) to make urban spaces more efficient, and also economically, socially and environmentally sustainable, in an attempt to increase the quality of life of present and future city-dwellers.<sup>5</sup>

Such a shift toward an “efficient” and citizen/customer-oriented idea of city testifies to the emergence of a new imaginary, and its relative narrative, about

<sup>5</sup> See for example the definition provided by the Focus Group on Smart and Sustainable Cities of the International Telecommunication Union (ITU), a specialised agency under the UN Economic and Social Council (ITU FG-SSC, UN 2015).

cities in the second half of the 2000s. Particularly after the 2008 global financial and banking crisis, a wave of financial austerity in large parts of the global North led city administrators to direct efforts toward the attraction of global private capital, resorting in certain cases to the privatisation and corporatisation of public urban spaces (Hollands 2015).<sup>6</sup>

Like other major developed economies, the Japanese government adopted the smart-city model as part of its energy and environment strategies in the last decade for very practical reasons. The March 2011 disaster was certainly a “crucial disjuncture” in this transition (Samuels 2013). According to one definition provided by the GOJ, a Smart city is

a sustainable city or region where issues intrinsic to urban areas are managed (planned, prepared, managed and run) using new technologies such as the ICTs. At the same time, it is a city or region where overall optimisation of the city activities is devised. (MLIT 2018)

In addition to renewable energy sources, a smart city is fundamentally data-driven and employs cutting edge information technologies in view of “the realisation of efficient management and deployment of the city infrastructures and services, while improving the residents’ quality of life” (MIC 2018).<sup>7</sup> Ideally, such a city is the hub for the creation of new products and services that may contribute to growth of the local economy.

To date, more than 104 smart city/smart community projects are ongoing in Japan (CO 2019). The majority of them (63) are implemented by the Cabinet Office’s Bureau for the Promotion of Overcoming Population Decline and Vitalising Local Economy under the scheme for the implementation of a “near future technology-based society” (*kinmirai gijutsu shakai*). This programme, inspired by the UN SDGs, aims to enhance the use of ICTs (Internet of Things, 5G connectivity, self-driving vehicles, etc.) to solve local issues with the support of ad hoc regulations (CO 2019).<sup>8</sup> The Ministry of Internal Affairs and Communication (MIC) is in charge of 35 other projects which are more strictly focused on ICT deployment for data collection and analysis to improve resi-

6 Citing growing public mistrust against governments all over the world, IBM, for example, maintains the need for the public sector to “embrace new technology, processes, ideas, and workforce skills” in order to better respond to the citizens’ needs and demands as efficiently as private companies (IBM 2019). Such a marketing strategy has been relatively successful. Hollands, for instance, estimates that between 2009 and 2013, IBM generated 3 billion dollars from its smarter city initiative (Hollands 2015: 69). Tech companies have also shown particular flexibility in adapting their offer to emerging issues such as migration and border control, climate change and natural disasters.

7 As clearly illustrated by DeWit (2015), the GOJ does not adopt a singular definition of the smart city, rather it adopts a multifaceted description resulting from various government agencies’ involvement in the identification and implementation of smart-city projects. However, the resemblance of such descriptions to those provided by major tech companies is evident. More comprehensive definitions are offered by private companies such as Mitsubishi Electric that stress the importance of low carbon sustainable power sources along with the provision of consumer-oriented control devices for maximum energy saving and emergency responsiveness (Mitsubishi Electric 2019).

8 Projects managed under this scheme also comprise the so-called “environment cities” (*kankyō shīti*), “environment model cities” (*kankyō mōderu shīti*) or “SDG model cities” (CO 2019).

dents' quality of life. This scheme includes cities such as Kashiwa, Sapporo and Takamatsu, where ICT has been deployed in disaster prevention (systems of sensors for early warnings) and tourism (bike sharing systems). The Ministry of Economy, Trade and Industry (METI), on the other hand, is the front-runner in projects aimed at using ICTs for a better and more efficient management of energy, with a stronger focus on the business sector. The METI has sponsored projects aimed at promoting the use of renewable energy and at the creation of local energy management systems (EMS) in residential areas (such as in the Kashiwa no ha project or in Senju, in Tokyo) and energy cogeneration in commercial and business districts (Nishishinjuku), educational institutions (Chūbu University) and manufacturing areas (Ohira) (METI n.d.).

The Abe government has since incorporated the concept of smart urbanisation into its national growth strategy aimed at realising a “Society 5.0”, i.e., a “super smart society” (PMO 2017). According to the strategy, the extensive employment of ICT for data collection and use in diverse sectors, ranging from car manufacturing to logistics to infrastructure building and management, is key to enhancing Japanese cities' and companies' competitiveness worldwide. In 2018, the Cabinet Office launched an expert commission aimed at the promotion of the concept of the “super city”, which is conceived as an evolution of the data-driven smart city, where e-government is enhanced, e-learning is implemented in schools and services, such as public transport and garbage collection, are automated (PMO 2018).

#### **4. Rethinking energy grids in Japan: Pre-3/11 state-led efforts**

The earthquake and tsunami that hit the Tōhoku region on 11 March 2011 (3/11) prompted the GOJ to adopt policies and technologies in an attempt to enhance the resilience of urban communities and infrastructures against the possibility of a natural disaster of major proportions. The 2011 natural disaster and nuclear accident represented a “critical juncture” in contemporary Japanese history, as they provided the grounds for new narratives to arise in view of the substantial political, economic and social changes (Kingston 2012, Samuels 2013). That of the smart community, or smart city, is an elucidatory case. It shows in fact that the emergence of certain discourses and the rise of relative discourse coalitions – groups of individuals sharing the same social construct identified as a “problem” and, thus, the same storyline regarding the problem itself and possible solutions – has accelerated. In addition, it shows how little impact the differences in the political orientation of successive cabinets have had against the backdrop of a hegemonising global narrative.

Given Japan's structural lack of primary energy sources and its vulnerability to natural disasters, government bureaucrats had been struggling to find solutions to ensure energy security and to enhance the country's overall resilience to global energy crises, natural disasters and climate change well before the March 2011 earthquake and tsunami (DeWit 2015). In the aftermath of WWII, the Japanese power generation sector was re-organised into regional monopolies subject to state supervision.<sup>9</sup> Power generation was initially achieved with a combination of large, slowly operating hydroelectric power plants covering baseload consumption needs and more rapid coal-fired thermal power plants to accommodate peaks of consumption. This model suffered structural distress during the high economic growth period in the 1960s, leading to the construction of new cost-efficient oil-fired thermal and nuclear power plants. In rural areas, government subsidies fostered local acceptance of large-scale energy facilities that mainly served distant metropolises and industrial parks (Berndt 2018: 131–139).

The oil crises of the 1970s prompted Japanese policymakers to rethink the country's policies in securing energy sources, but did not really affect the GOJ's industrial policy of plant and heavy machinery construction. Between the early 1970s and early 1990s, the GOJ started investing in energy conservation technologies and nurtured the domestic nuclear industry in view of its future export potential (*ibid.*: 144). The nuclear industry would remain central in the GOJ's energy strategies aimed at stabilising the country's energy supply at least until 2010.

With the adoption of the Kyoto Protocol in response to the new international concern about climate change, the Japanese government enacted a specific law on global warming (*chikyū ondanka taisaku no suishin suru hōritsu*) in 1998. The legislation and its successive amendments set a 6% greenhouse gas emissions reduction target by 2008–2012 and urged domestic appliances and car manufacturers to adopt world-class energy efficiency standards. It also stipulated that local governments throughout the archipelago were responsible for limiting greenhouse gas (GHG) emissions and finding viable countermeasures in accordance with their respective areas' "natural and social conditions" (Sugiyama / Takeuchi 2008: 425–26). Despite the relatively limited authority conceded by the national government to prefectures, municipalities, towns and villages on climate change, local government initiatives in this regard started appearing in the early 2000s. The launch of initiatives aimed at reducing carbon emissions by encouraging the public to use mass transportation services was accompanied by the establishment of specific regulations (in the case of Tokyo and Kyoto in the mid-2000s) requiring companies and

9 I.e., the state is responsible for setting the electricity price.



businesses to adopt environmental management systems and energy efficiency measures (*ibid.*: 431–32).

The 2005 Aichi Expo, whose concept revolved around the relationship between man and nature, was an occasion for the display of Japanese companies' achievements in public transportation and power generation and distribution technologies, as well as examples of public-private collaboration in curbing carbon emissions. Among the Japanese companies involved, Toyota Group took centre stage. The world's top carmaker presented its efforts in the development of hybrid vehicles (specifically buses) and hydrogen technology for engine fuel supply and their practical applications in Toyota City, a town of 420,000 people located nearby the Toyota plants. At the same time, an ad-hoc power generation plant installed near the exhibition grounds by a consortium of nine companies including Toyota, Kyocera, NTT, Mitsubishi Heavy and Chūbu Electric, the regional power utility, supplied electricity and heating, generated through a mix of renewable energy sources (fuel cells powered by biogas and solar panels), to the pavilions. The power supply system was designed by a team of engineers coordinated by Kashiwagi Takao, Professor at the Tokyo Institute of Technology and one of the leading Japanese "energy intellectuals" of the last two decades (Kashiwagi 2011, DeWit 2014).

Initiatives at the local level remained key to attaining environmental policy targets even after the Aichi Expo. In 2008, the conservative Fukuda cabinet announced that Japan would cut by 80 per cent its GHG emissions by 2050 through investments in the latest nuclear power generation and carbon capture technologies. In order to encourage local governments to participate in the national strategy, Fukuda launched a contest for the best ecologically sustainable cities, which resulted in the nomination of a dozen "environmental model cities" (*kankyō moderu toshi*) and their CO<sub>2</sub> emissions reduction plans (Sugiyama and Takeuchi 2008: 428–29).

Such a state-led model area strategy for GHG reduction continued under the successive reformist DPJ<sup>10</sup>-led cabinets. Starting in late 2009, Tokyo identified four Test Projects for Next Generation Energy and Social Systems, i.e., smart cities and communities. If certain projects (Toyota, Keihanna and Kitakyūshū) were mere continuations of previous initiatives (such as the "environmental model cities"), others started from scratch (Yokohama). Each project was developed in collaboration with at least one key actor in the energy, infrastructure and tech sectors, such as Toshiba, Toyota, Mitsubishi Heavy and IBM Japan (Samuels 2013: 145). The smart-community model, based on an energy distribution model structured around a network of small-scale power distribution systems (smart grids), came to be seen as a more secure and potentially more resilient alternative to large centralised power distribu-

10 Democratic Party of Japan (DPJ).

tion systems.<sup>11</sup> All the more so, if one considers the absence of connections to macroregional power distribution systems and the internal differences between Eastern and Western Japan, as opposed to the regional connections or even nationally integrated energy networks found in Europe. Concomitantly, a more compact and infrastructurally efficient model of urbanisation centred on the smart grid might help the national and local governments to tackle pressing issues such as ageing and depopulation (DeWit 2018).

Reformist sections of the METI bureaucracy were thus moving toward nurturing an alternative energy sector, aware of its export potential in the near future. The Government of Japan also created a specific budget (amounting to 126.5 billion yen) through which the METI and its New Energy Promotion Council (NEPC), established in 2008, could subsidise future projects in sustainable urban development (Pham 2014: 21–24). Table 1 summarises the contrasting views on power generation and supply, within the METI, before and after the Kyoto Protocol.

Table 1: Pre- and Post-Kyoto Protocol views on power generation within the METI

<b>Pre-Kyoto Protocol Dominant Model</b>	<b>Post-Kyoto Protocol Alternatives</b>
large-scale infrastructure	small-scale infrastructure
region-specific supply network	integrated network (possibly inter-regional and international)
constant baseload	demand-based baseload supply
urban-rural divide	local generation and consumption

Source: compiled by Marco Zappa

11 For a detailed discussion of Japan's power generation industry and its links to national and local politics and policymaking, see Berndt 2018.

## 5. The DPJ New Growth Strategy and the emergence of the “radical thinkers”

In 2010, the DPJ-led GOJ issued a New Growth Strategy<sup>12</sup> emphasising the role of “green innovation” in the attempt to revitalise the national economy and to contribute to solving global issues. The 2010 strategy stressed the importance of enhancing Japan’s strengths (such as the country’s longest life expectancy, its scientific and technological advancement) to gain global leadership in the energy and environment sectors.

Priority areas were: spreading and expanding renewable energy sources along with nuclear power; developing innovative technologies for energy conservation, efficient power supply and material recycling; promoting a shift toward a low-carbon lifestyle, expanding eco-housing and transforming energy consumption habits through the adoption of new lighting technologies (such as LEDs and electroluminescent displays); promoting urban renewal and redevelopment through deregulation and green incentives; and creating eco-friendly and self-supporting local communities through the enhancement of ecologically sustainable infrastructures and mobility networks supporting local economies based on the environment, healthcare and tourism (PMO 2010: 15–17).

In this way, advancing “green innovation” through a comprehensive policy package would lead to a reduction in Japan’s GHG emissions by 25 per cent by 2020 and create a 50-trillion-yen market and 1.4 million new jobs. Globally, this would curb 1.3 billion tonnes of CO<sub>2</sub>. In this effort, a collaboration between the public and private sector (*kanmin ittai*) was crucial. According to the strategy, in addition to implementing green innovation, to achieve a strong economy Japan needed to look toward Asia. With many regions in Asia confronting challenges such as urbanisation, environmental decay, falling birth-rates and rapid ageing, Japan needed to be able to meet the demand for transport and energy infrastructure, waterworks, healthcare services and goods, green technologies and, broadly, know-how, to further sustain the country’s economic growth in the coming decades. It is worth noting that terms like “innovation” (*inobēshon*) and “energy” (*enerugi*) occur far more frequently (52 and 48 times, respectively) throughout the New Growth Strategy than unemployment (*shitsugyō*) and poverty (*hinkon*) (12 and 1).<sup>13</sup>

12 The Japanese version of the strategy document carries a subtitle that reads: “recovery scenarios toward a healthy Japan” (*Genkina Nihon fukkatsu shinario*). The rhetoric of the lost two decades is present in this document. In fact, the strategy affirms that in order to achieve a “healthy Japan”, a new growth strategy was required in order to break with the past and with the old-school pork barrel politics conducted by the LDP.

13 Even though the document is not specifically focused on smart cities, this result is in line with the findings of the analysis carried out by Gonella et al. (2019) on European Commission documents and with the technocratic argument put forward, among others, by Greenfield (2017).

Besides national and local government endeavours in drafting new energy policies, the late 2000s saw the emergence of prominent individuals advocating a large-scale paradigm shift in Japan's energy policies. As argued by DeWit (2014), "radical technocrats", like the above-mentioned Kashiwagi Takao, have been able to exert some influence on the public debate and, eventually, thanks to what could be defined as a form of "technonationalism", on actual policymaking. For instance, the largely technocratic tone of the 2010 New Growth Strategy is reminiscent of one of Kashiwagi's most influential works, published a few months after the release of the New Growth Strategy and dedicated to the Smart Revolution (*sumāto kaikaku*) (Kashiwagi 2010). In the introductory note to the book, which praises the affiliation of both former PMs Hatoyama and Kan with the Tokyo Institute of Technology (the first as former researcher, the latter as alumnus), the institution where Kashiwagi himself teaches, the engineering professor offers an optimistic look at the regime change (*seiken kōtai*) that ousted the LDP from power and might put the Japanese economy back on track. He praises the DPJ's earlier initiatives regarding the economy and environment, hoping that DPJ leaders will be able to affirm the supremacy of politics to win over the bureaucrats' cooperation in the name of "national interest" (*kokueki*) without falling into LDP-style log-rolling.

Further on, the Tokyo Institute of Technology professor argues for a gradual energy paradigm shift that would not only contribute to the achievement of the ambitious CO<sub>2</sub> reduction goals set by the GOJ, but would also create new business opportunities and jobs leading to the revitalisation of the Japanese economy. One of the key elements in this transition is the spread of "smart grids", i.e., ICT-based decentralised power supply networks enabling the integration of diverse natural energy sources and a demand-based energy supply. Technological innovations of this sort could spur international cooperation with preminent international partners, such as the US and Europe, thus contributing to the establishment of new international standards based on Japanese technology and avoiding international isolation (i.e., the "Galapagos" effect; Kashiwagi 2010: 19, 186).<sup>14</sup> Kashiwagi also adds that many developing countries in Asia, such as China and India, have already started or will soon start looking at Japan for solutions to issues such as decarbonisation, energy supply optimisation and countermeasures against an ageing society. In particular, China is expected to complete its transition from emerging country to advanced economy in the next few decades, and will possibly turn to Japan for clean technologies (including nuclear power generation) and human resource development in the energy and environment sectors (Kashiwagi 2010: 71, 186).

<sup>14</sup> Page numbers for this book refer to the electronic edition of the text as available on Honto e-reader in full-screen visualisation.

## 6. The immediate post-3/11 technonationalistic solutions

However, it was in the aftermath of the 2011 nuclear accident that new energy generation and supply models became more popular. Following the meltdown of three reactors at the Fukushima Daiichi nuclear plant, the GOJ opted for a phase-out of all 54 of the country's commercial nuclear reactors. This decision would lead to a drop of almost 20 per cent in Japan's power generation capacity. Against this backdrop, the GOJ took steps towards reducing the demand for electricity and diversifying the sources of energy supply, while also drafting power system reform plans and strengthening standards and regulations in the nuclear sector (Duffield 2016). The GOJ swiftly passed a law on renewable energies, introducing a feed-in tariff in order to promote the spread of private and mass systems of power supply generated by renewable sources (METI 2012, Samuels 2013). On top of this, one year after the 3/11 events, Tokyo put out an energy and environmental strategy based on the idea of a nuclear-free society (*gempatsu ni izon shinai shakai*; Committee for Energy and Environment 2012).

These moves aimed to respond somehow to the growing public distrust toward nuclear energy (Kitada 2013). Against this background, the government turned to experts for policy advice. For example, another renowned energy intellectual, former President of the University of Tokyo and chairman of the Mitsubishi Research Institute Komiyama Hiroshi, came to the fore urging the cabinet to accelerate the adoption of a new national energy strategy based on energy conservation. At a hearing with the House of Representatives (HOR) Special Committee on Science, Technology and Innovation, Komiyama maintained the need to "use" the earthquake- and tsunami-stricken areas as spaces to carry out "social experiments" in terms of the application of technological innovations that might eventually help Japan move from a 20th-century model of industrial and social arrangements (increased production through an increased energy supply) to a 21st-century one (based on green innovation, smart technology for maximum energy efficiency, tourism and service sector development). According to Komiyama, who shortly after the 3/11 disaster was appointed president of the Miyagi prefectural assembly for disaster recovery, the key to the region's recovery and to Japan's "re-creation" (*saisōzō*) is investment in broadband connectivity and ICT-technologies – the foundations of the smart communities envisioned by the government – in a fiscally deregulated environment, i.e., through the identification of recovery special zones (*fukkō tokku*) where local governments take the lead.

More specifically, in drafting his vision for the year 2050, Komiyama depicts a country that through energy saving and resource recycling is able to become fully self-sufficient (*shigen jikyū kokka*) and lead the world in a global

energy transition (HOR 2011). Even though he did not touch upon the topic during the hearing with the HOR Special Committee, Komiyama believes that Japan has the capability if not to lead the world, then at least to become Asia's intellectual and technological leader in the 21st century. In his 2011 book *Japan's Re-creation*, much in the same vein as Kashiwagi, Komiyama states that Japan has the advantage of being confronted with issues such as a scarcity of natural resources, environmental decay and an ageing society in advance of other emerging Asian countries. Technologies and know-how developed in Japan can be utilised to solve such issues and eventually be exported to neighbouring countries and peoples when needed. This might be Japan's greatest contribution to the history of humankind (Komiyama 2011).

In this context, the debate on Japan's energy and environment plans expanded to include businesspeople and local administrators. In particular, a few weeks after the disaster, a bloc of renewable-supporting entrepreneurs led by Softbank founder and CEO Son Masayoshi, backed by a number of prefectural and municipal leaders, emerged and attracted national attention. On the one hand, local politicians, such as Kanagawa governor Kuroiwa Yūji, started pushing an agenda for renewable sources based on local energy autonomy and cashed in on public distrust against regional energy utilities and the national government (Kuroiwa 2013). On the other hand, Son successfully vouched for state measures aimed at favouring the development of photovoltaic power generation through government subsidies<sup>15</sup> and started envisioning his own technonationalistic view, well exemplified by the idea of an "Asian super grid" (Japan Renewable Energy Foundation 2012). This is the name that the telecommunications entrepreneur gives to a multinational energy supply network through which Japan could buy energy generated in comparatively larger quantity and at a lower price in Mongolia or any other country in the region, and sell domestically generated renewable energy abroad:

[The Asian super grid] would connect many countries in Asia through cables and promote the exchange of power generated from natural sources. If we manage to build it, we would solve problems such as the high generation costs, limitations to supply and instability. [...] It implies producing energy from natural resources across Asia, and sharing it according to each country's needs using a continental power network [...] Possibly, even in Japan in the near future, we will develop magnificent solar power technology and will be able to supply it at a low cost and in great quantity. We could sell this energy to other Asian countries, thus transforming Japan into an energy-exporting nation. (Japan Renewable Energy Foundation 2012: 20–22)

Even though Son presents his vision as a win-win strategy, Japan would be the greatest beneficiary, for it would definitively renounce nuclear power and would

15 The GOJ was receptive and a year later approved a feed-in-tariff scheme aimed at favouring the distribution of renewable-generated energy, in particular solar, in the national grid (METI 2012, Samuels 2013). Also, the GOJ drafted an energy and environmental policy based on the idea of a nuclear-free society (*gempatsu ni izon shinai shakai*; Committee for Energy and Environment 2012).

take the lead of the project, giving Asian countries the chance to become energy exporters.

Embedded in this plan is a sort of “reification” of Asia, viewed as a land of infinite opportunities and resources, and at the same time, a hierarchical vision of the system of international relations in the region with Japan at the top (Tamaki 2015). However, as discussed above, such an understanding of Japan’s position is not uncommon among other energy intellectuals and, as it will be shown, still somewhat informs the GOJ’s approach to international cooperation in the smart-city technology sector.

## 7. Energy and environment policies under the second Abe cabinet

The DPJ’s ambitious “zero nuclear by 2030” policy, launched in the aftermath of the March 2011 disaster, was scrapped upon the return to power of the Liberal Democratic Party (LDP) and the current Japanese Prime Minister Abe Shinzō. However, the new conservative cabinet did not abandon the idea that new energy and environmental technology could contribute to the country’s national and local economic recovery. In addition, it is worth noting how the government has successfully integrated revisionist views on energy and the economy, such as those of Kashiwagi and Komiyama, into its official policies.

In fact, while proposing a gradual return to nuclear energy, in 2014 the Abe cabinet adopted a new Strategic Energy Plan based on the concept of an energy mix, a combination of traditional energy sources (including nuclear) and renewables.<sup>16</sup> Even though the paper did not set any specific long-term targets for the contribution of each type of energy source in the energy mix (Duffield 2016), the GOJ’s plan to trigger economic growth in peripheral regions by increasing the ratio of power generated through sustainable sources was clear. Furthermore, in the third paragraph, section 2, of the document, the GOJ reaffirmed the importance of establishing an “advanced energy-saving society and smart and flexible consumer activities” (*tettei shita shōenerugi shakai no jitsugen to, smāto de jūnanna shōhi katsudō no jitsugen*) promoting the use of high-performance insulation materials for heat conservation in the construction sector; power-efficient lighting equipment, electric appliances and cars; and the introduction of energy management systems for businesses. The 2014 strategy stresses the importance of a smart energy supply (based on

16 The strategy officially reinstated Japan’s nuclear energy policy. The restart of idled reactors could be allowed only after safety inspections by the Nuclear Regulation Authority. In 2015, the GOJ finally set targets for the nuclear share of energy production to be 20 percent of the total (that is, pre-3/11 levels), as against 22 for renewables.

actual demand) and set specific targets (such as the 100% switch to LED lighting and an increase by 50%–70% of next-generation vehicles by 2030).

Earlier in 2013, the Cabinet Council for Science Technology and Innovation, chaired by PM Abe, had expressed the intention to make the draft of a new national plan for environment and energy technologies one of the GOJ's top priorities and to make it an integral part of the country's continual diplomatic efforts (CO 2013). In order to do so, the council had to take on a leadership and coordination role in two state programmes aimed at promoting strategic scientific and technological innovation: the Cross-ministerial Strategic Innovation Promotion Program (SIP) and the Impulsing Paradigm Change through Disruptive Technologies Program (ImPACT). Particularly, the SIP aims at answering "critical social needs" and "offering competitive advantage to Japanese industry" by facilitating coordinated research and development activities among government, enterprises and universities. It operates under a 50-billion-yen budget (2017) and has launched 23 issue-based programmes,<sup>17</sup> including innovative combustion technology, next-generation power electronics, automatic driving systems, infrastructure maintenance, the enhancement of societal resiliency against natural disasters, big data and cyberspace technologies, cybersecurity, technologies for next-generation smart agriculture and energy systems toward decarbonisation.<sup>18</sup> Programme directors are chosen from both academia and industry. Specifically, the decarbonisation programme is directed by Kashiwagi Takao, whose "radical" positions on power generation have gained popularity since the late 2000s.

The METI-sponsored smart community development and energy conservation plans launched under the DPJ were not shelved. On the contrary, while insisting on the role of nuclear energy in the best energy mix, the LDP-led government chose to "maximise opportunities" in the green and smart technologies sector.<sup>19</sup> To this end, the Abe cabinet in coordination with the Keidanren decided to accelerate the "smart communities" initiatives initiated prior to March 2011. Proof of this acceleration is the rise in ministerial budgets and government expenditures in this sector over the last eight years. For example, METI's budget requests to support energy efficiency and conservation initiatives (through the development of new technologies for hydrogen utilisation) have grown steadily from 2014 to 2019. They amounted to nearly 243 billion yen in 2015, 323.4 billion in 2018 and 501.5 billion for 2020 (DeWit 2015).<sup>20</sup>

17 11 in the first 2014–18 period, 12 since 2018

18 An exhaustive list of the issues is available in English on the Cabinet Office website, [https://www8.cao.go.jp/cstp/panhu/sip\\_english/sip\\_en.html](https://www8.cao.go.jp/cstp/panhu/sip_english/sip_en.html) (accessed 25 September 2019).

19 DeWit 2014, 2015, 2018; Samuels 2013:

20 In particular, DeWit (2014) points out that Tokyo Institute Technology Professor and government advisor Kashiwagi Takao has been one of the key figures in this transition. Kashiwagi is in fact the designer of the first Japanese "smart community" presented at the Aichi world fair in 2005. For an exhaustive description of Kashiwagi's role in the draft of Japan's energy and growth policies see DeWit 2014 and 2018.



Thus, as was the case for the nuclear sector in the previous two decades, the GOJ aims at developing a domestic economy of scale centred on defined “green energy” technologies and eventually meeting demand from overseas (Berndt 2018: 144). To foster growth in external demand is the task of both the METI and the MOFA, whose role will be discussed in the following section.

## 8. Smart cities as a tool of foreign policy

As illustrated above, the 3/11 events accelerated the articulation of new energy distribution and use models by the Japanese government for domestic purposes. Japan’s commitment to the UN Sustainable Development Goals and the 2015 Paris Accord<sup>21</sup> while promoting the adoption of Japanese technologies abroad provided the background to the enhancement of GOJ’s outbound public-private coordinated initiative on the smart city.<sup>22</sup>

In his address at the COP21 in Paris in 2015, Japanese PM Abe put forward his cabinet’s priorities for complying with the agreement. Preference would be given to initiatives designed to strengthen developing countries’ resilience to climate change and to provide a good quality of life for their people. For instance:

We will bring Africa clean power using geothermal energy from the centre of the earth. We will bring light to those areas left out of power networks. We will pass down the lessons learnt by Japanese cities to developing countries in Asia where cities are experiencing a rapid growth of their populations. We will make sure that the peoples of the island countries in the Pacific can take refuge hours before a typhoon hits, providing early warning equipment and know-how. These are all sectors where Japanese enterprises have developed the best solutions after years of efforts. We will always be there to help whoever needs it. (PMO 2015)

This quote exemplifies the willingness of the GOJ to offer assistance to developing countries struggling to mitigate the effects of climate change by sharing Japan’s “experience” and state-of-the-art technologies. It also reveals the GOJ’s ambition to become a regional and global intellectual and technological leader as also argued by energy intellectuals such as Kashiwagi, Koyama and Son. In other words, this quote signals the existence of a shared “storyline”

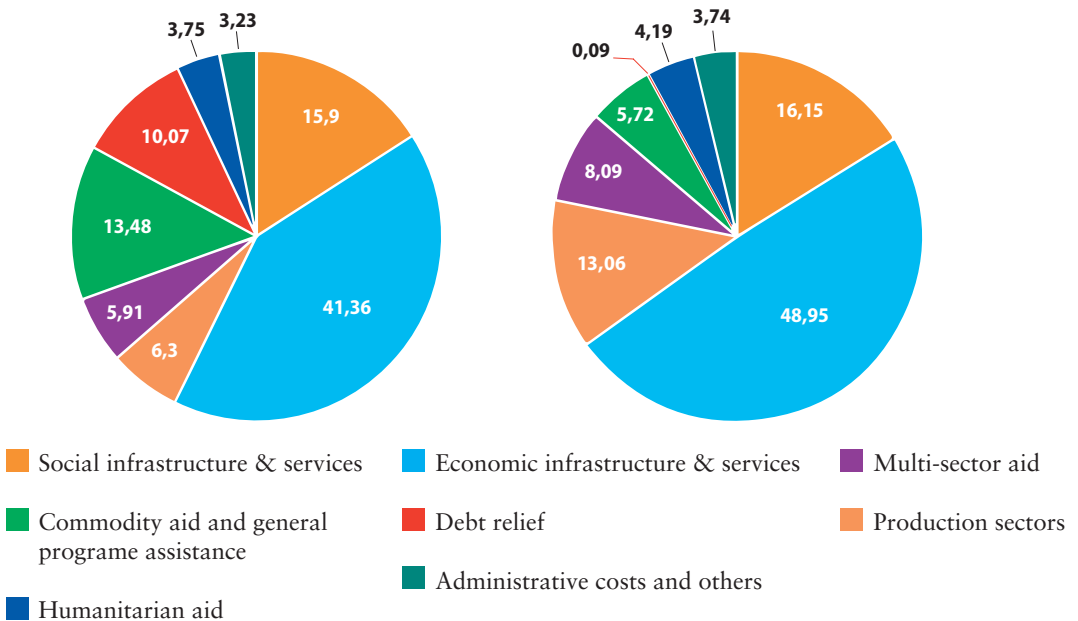
21 Member countries agreed to contain global warming within the 2°C threshold.

22 The private sector has been particularly responsive to this transition at the level of public discourse. Sumitomo Corporation, one of the largest Japanese trading companies, was among the actors that saw a business opportunity in the export of smart city technologies. In light of traumatic natural events such as the 2011 Japan earthquake and tsunami, as well as the emergence of global issues such as the constant increase in the global population, the uncontrolled growth of cities, ageing, the use of natural resources and so forth, in his 2012 inaugural address former Sumitomo president Katō Susumu encouraged his employees to work for “the realisation of the smart city toward a recycle-oriented society” and “the establishment of a new lifestyle in accordance with the ageing of many societies around the globe” in response to the “new needs” that societies around the globe will experience in the future (Katō 2012).

concerning the role that Japan must assume in order to help to solve global issues.

A key public actor in this process has been the Ministry of Foreign Affairs. After its 2006 comprehensive reorganisation, the Japanese government opened a Climate Change Division within the International Cooperation Bureau in order to foster better cooperation with other ministries in charge of energy and environmental issues, specifically the METI and the Ministry of Environment. In September 2015, the Ministry appointed a ministerial advisor to support MOFA’s activities in “science and technology diplomacy”, signalling the growing importance of this sector to the country’s international cooperation efforts. Foreign Minister Kishida Fumio nominated materials engineer and University of Tokyo Professor Kishi Teruo for the post. Kishi is another pre-eminent member of the Strategic Innovation Promotion Program, in charge of two programmes: Structural Materials for Innovation and Materials Integration for revolutionary design system of structural materials. In his function as scientific advisor to the FM, in addition to organising conferences and study groups with scientists and experts of all fields, Kishi took part in several international summits contributing to ministry network-building activities. He also helped to draft strategy papers, such as a “roadmap” on technological innovation for SDG achievement later adopted at the 2017 G20 summit meeting in Osaka (MOFA 2019a).

Figure 1: Distribution of Bilateral ODA by Sector, in per cent (2013 vs 2017)



Source: Compiled by author based on data from MOFA 2014a and 2018a

In particular, the promotion of smart-city solutions to ODA recipient countries has intensified. This development can be traced by studying Japan's ODA disbursements before and after 2015. In 2013, 40% of the total outlay of 17.3 billion dollars in bilateral aid was allocated to economic infrastructure and services (comprising energy and transportation) and 10% to multi-sector aid (i.e., environmental protection). In 2017, the ratio was up in both sectors, by 51% and 15%, respectively.

One of the tasks of the ministry is to contribute to the country's national security (and specifically energy security) by gathering information from across the globe, using its network of embassies and Japan International Cooperation Agency (JICA) branches. Its initiatives in the energy sector constitute the so-called "energy diplomacy" (*enerugi gaikō*; MOFA 2019b). Japan's foreign ministry acts in accordance with the national energy strategy, summarised in the expression 3E+S, i.e., Energy Security, Energy Efficiency, Environment, plus Safety. The MOFA undertakings are, however, concentrated on the contribution to the UN-led global effort against climate change and on support for the improvement of global access to energy. According to a 2019 pamphlet, between 2013 and 2017, the ministry invested nearly 13.5 billion dollars in energy-related cooperation (the largest donor among OECD countries), 3 billion of which has been in renewables (MOFA 2019: 4). Since 2017, FM Kōno Tarō, previously a detractor of LDP's conservative energy policies after 3/11, has promoted a more comprehensive diplomatic approach to environmental issues. For instance, at the International Renewable Energy summit in 2018, Kōno specified that he was committed to making Japan a global leader in the global energy shift toward renewables such as solar power and to electric mobility thanks to the country's advancement in battery technologies (Kōno 2018: 2).<sup>23</sup>

As opposed to other Ministries, however, the MOFA does not have a specific document or a specific interpretation of smart cities. The ministry's position regarding this issue emerges from a wide range of documents, such as joint statements, conference reports, speeches and press releases available on the MOFA's website.

Since 2011, Japan's foreign ministry has been building a network of cooperation agreements with international partners, in particular from the Eurozone (MOFA 2013, 2014b), Russia (MOFA 2014c) and India (MOFA 2016a) for the development and application of environment-friendly technologies in cities. Furthermore, the GOJ and its agencies (JICA and Japan External Trade Organization [JETRO], in particular) figure among the dialogue partners for the Association of Southeast Asian Nations' (ASEAN) regional sustainable urbanisation

23 It is worth considering that since the aftermath of the Fukushima nuclear accident, Kōno has been one of the strongest supporters of renewables inside the LDP (Kōno 2010). Another resister has been absorbed into the hegemonic discourse.

strategy (ASEAN 2018) and as supporters of specific smart city projects in continental Southeast Asia under the framework of the ASEAN Smart City Network (Centre for Liveable Cities 2018).<sup>24</sup> JETRO operates in ASEAN countries in coordination with the United Nations Development Programme in order to match local governments' demands for digital innovation with Japanese tech companies' solutions in the sector. The smart-city model has in fact become synonymous with sustainable and resilient urban development and is envisaged as a solution to developing countries' demand for infrastructure in line with achievement of the SDGs (PMO 2019: 25).

This is consistent with the ministry's overall strategy, in particular concerning international cooperation. According to the 2015 Diplomatic Bluebook, one of the priorities of the MOFA's overseas actions is to foster "quality growth". This expression points to a shift from a quantitative to a qualitative model of aid. In particular, the definition of quality growth promoted by the MOFA entails the concepts of "sustainability", "harmony with the environment" and "resilience", specifically against "shocks" such as economic crises and natural disasters. Moreover, it is fundamentally rooted in Japanese experience, i.e., in the country's postwar "miracle" (Zappa 2018: 424).

As of 2018, the GOJ through its overseas agencies such as JICA and JETRO contributes to and leads smart projects overseas under its numerous international cooperation agreements. The most relevant of these are: a) the development of a dedicated freight railway along the Delhi–Mumbai Industrial corridor; b) the development of a new central railway station in Bangkok and the "smart"-ification of its surroundings; c) the Hanoi smart city project, involving more than 20 companies including Sumitomo Corp. and Mitsubishi Heavy, focused on self-driving electric mobility and energy-efficient housing and business facilities; d) the Philippines' smart city project in New Clark City, a special economic zone in the Northern Philippines, funded through the Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development (PMO 2018).

Apart from being an attempt to differentiate Japan from emerging donors such as China, the ideas of "quality growth" and "quality aid" through sustainability are particularly significant in the post-3/11 environment. In March 2012, less than a year after the Fukushima Daiichi nuclear accident, the MOFA, along with the METI and the Ministry of the Environment, hosted an international seminar on "smart community proposals for reconstructing the disaster-affected areas". On that occasion, the then UN general secretary Ban Ki-moon sent a message promoting "sustainable energy for all". As publicised

24 Specifically, JICA is working with the Yangon City Development Committee in Myanmar on the construction of a "pedestrian friendly" road network that will help to preserve and enhance historical buildings and monuments. Concurrently, JICA is working on the new Phnom Penh municipal Urban Transport Master Plan 2035, aimed at implementing the Cambodian capital's public transportation service (CLC 2018: 20, 45).

on the MOFA website, the ultimate aim of the event was to “gather global wisdom in Tōhoku, and spread a new Tōhoku community model to the world” (MOFA 2012a). In so doing, the participants pledged to provide “solutions to the international community’s challenges such as realising sustainability, disaster prevention and a low-carbon society”. At this international conference, the GOJ started envisioning a new model of sustainable and disaster-resilient urban development extensively relying on renewable energies, electric mobility and ITC infrastructure. The 3/11 incident, a man-made disaster, was reframed by the Japanese authorities themselves as a “lesson” whose main legacy was a new model of energy infrastructure and urban development.

Japan’s public efforts towards building sustainable smart cities at home and abroad was clear in September 2012, when at the 14th Major Economies Forum on Energy and Climate, along with another 15 country representatives, the GOJ, after presenting Japan’s achievements in smart city development and renewable energy use, pledged to continue acting towards the mitigation of the effects of climate change (MOFA 2012b). One month later, the MOFA, through the Japan International Cooperation Agency (JICA), was among the participants in the 1st Asia Smart City Conference in Yokohama, an event that saw the participation of mayors and representatives from cities in developing Asia and international organisations engaged in a discussion of the technologies and know-how to build low-carbon sustainable cities. The event was also designed as a showcase for Yokohama’s (one of METI’s model “smart communities”) cutting-edge initiatives and best practices (City of Yokohama 2012).

Subsequent editions of the conference saw a more direct involvement of the MOFA. In his keynote address at the 3rd edition of the event in 2014, Nakane Kazuyuki, Parliamentary Secretary to the Minister of Foreign Affairs, hoped for more cooperation between the central government, local authorities and private companies to share experiences and know-how with partner countries, particularly from Asia, in order to foster more sustainable urban development in the region (MOFA 2014e). At the 5th edition of the conference in 2016, Odawara Kiyoshi, Parliamentary Secretary to the Minister of Foreign Affairs, reaffirmed the MOFA’s support for local governments and enterprises contributing to the development of smart cities across Asia (MOFA 2016).

The most relevant MOFA-led initiative in smart-city diplomacy is, however, the “city tour”. Stressing the importance of exporting a smart-city model to developing Asia, in December 2014, the MOFA organised a tour of another model smart community, Kashiwa no ha (in Kashiwa City, Chiba Prefecture) for a group of Southeast Asian ambassadors to Japan. This tour was intended to present to the diplomatic community in Japan how Japan’s public and private sectors had “united” (*kanmin ittai*) in environment-friendly and low-carbon-emission urban design. At the same time the tour aimed to promote interaction between foreign dignitaries and representatives of Japanese construction

and real-estate companies. The event was realised in cooperation with Mitsui Fudōsan, Shimizu Corporation and Mitsubishi Estate. In particular, the visit to the Kashiwa no ha smart city is worth analysing, as the urban project is presented as being focused on environmental sustainability (*kankyō kyōsei*), health care for longevity (*kenkō chōju*), the creation of new industries (*shin sangyō sōzō*) and civic participation (MOFA 2014d). Since 2013, in fact, Kashiwa no ha has served as the main exhibition site of made-in-Japan solutions for smart-city technology. Here, the MOFA in collaboration with the real-estate branch of the Mitsui conglomerate and the Agency has organised annual presentations to the entire diplomatic corps aimed at circulating models of cutting-edge urban technologies realised through the cooperation between private and public actors both within and outside of Japan, and fostering awareness of the application of ICT to urban development. The first such event in 2013 was hosted inside the smart city and its programme involved a visit to the Kashiwa no ha Smart City Museum, where diplomats were instructed on Japanese smart-city initiatives with the support of virtual reality applications.

In addition to smart cities, since 2014, the “city tour” programme has also served to showcase events in high-tech infrastructure and ICT-based construction and manufacturing projects for the diplomatic community in Tokyo, with particular attention to South Asian, Southeast Asian and African diplomats. The initiative’s main aim has been to promote “high-quality infrastructure” (*shitsu no takai infura*) among the representatives of Japan’s ODA recipient countries (MOFA 2016b, MOFA 2018b). Apart from their declared diplomatic objectives, these showcasing events are emblematic of the “All Japan” approach – that is, uniting the efforts of the national government, businesses and local governments, with development assistance sponsored by government and LDP officials (MOFA 2014d, PMO 2018).<sup>25</sup>

## 9. Summary

This paper has analysed the emergence of a Japanese narrative against the backdrop of a global discourse on smart cities since the late 2000s. The main theoretical assumption of this paper, inspired in particular by Jessop and Sum (2006, 2013), is that the articulation of a specific narrative coincides with a specific juncture (or disjuncture) in the real world. In particular we have ana-

<sup>25</sup> It is worth noting that the expression “All Japan” is found in diverse circumstances. In documents issued by the LDP, it is associated with the word *taisei* (“system, approach”) and describes a nation-wide network that needs to be “strengthened” in preparation for international events (such as the 2020 Tokyo Olympics), or in implementing energy, information and economic development and recovery strategies. See for instance LDP 2016, PMO 2018.

lysed the emergence of a specific discourse coalition revolving around the idea of a technological nation that, having gone through a traumatic event such as the 3/11 disaster, has the duty to solve global issues by providing material aid and knowledge to developing countries.

The first half of the paper has shed light on the building of a Japanese narrative on the smart city in light of global discursive developments. The largely technocratic approach and the insistence on concepts such as efficiency are revealing of the inclusion of a corporate approach to city management. Following Hollands (2015), it is possible to argue that the 2007–2008 financial crisis that originated in the US and spread to Western Europe has contributed to reshaping the global imagery of urban settlements. Recent developments in ICTs, in particular, have laid the foundations for a greater application of these technologies and for their valorisation as drivers of next-generation cities. This is a story-line around which discourse coalitions (mostly formed by government institutions and multinational tech companies' executives) have emerged at a global level, and the emergence of a smart city narrative in Japan cannot be detached from these global trends. Nevertheless, if on the one hand the Japanese discourse on smart cities is structured around key concepts such as “sustainability”, “efficiency” and quality of life, on the other hand, in light of the March 2011 earthquake, tsunami and Fukushima nuclear accident, it has assumed distinctive features.

First, as noted by DeWit (2014, 2015 and 2018) and arising from the discussions by energy-policy intellectuals of the late 2000s, the Japanese smart-city model is primarily centred on energy supply and consumption aimed at reducing the carbon footprint, rather than, for instance, crime prevention. This approach is clear in official energy policies adopted before and after 2011 and is tied to Japanese policymakers' continual efforts to find ways to secure the country's energy supply in the event of massive disruptions due to natural disasters or geopolitical events.

Second, when considered as a diplomatic tool, the smart city carries in itself traces of technological nationalism. In other words, the smart city is often no more than an occasion for showcasing technologies designed and/or manufactured in Japan that might help to advance the GOJ's foreign policy objectives, namely, advancing Japan's national interests (i.e., supporting Japanese companies abroad) and showing Japan's commitment to the international community's targets in terms of development and mitigation of the effects of climate change on human society. Specifically, Japan's foreign ministry is particularly keen on utilising the smart city model as an epitome of its “quality”-focused aid policies (centred on quality infrastructure, green technologies and human resource development) in opposition to other emerging actors in international cooperation (i.e., China) who are approaching developing countries.

In this, the convergence of state and private interests is particularly evident and elucidatory of the “distributional coalition” identified by Berndt (2018).

Lastly, the analysis has shown the general lack of consideration of social issues (such as poverty or social inequality) among all actors involved in narrative articulation when presenting the idea of the smart city. The “technocratic” approach is apparent, both domestically and in overseas projects. Despite their possible positive outcomes in reducing Japan’s carbon footprint through efficient energy and space utilisation (DeWit 2013, 2015; OECD 2017) smart-city projects both on the Japanese archipelago and abroad are mostly top-down initiatives at the intersection of government, universities and industry interests. In fact, many calls for a more inclusive approach toward citizen groups, NGOs, local shop owners and so forth, right from the project design phase, have been repeated in recent years (see DeWit 2013 and in particular EY 2014). However, further research is needed to determine whether and how bottom-up counter-narratives on the smart city have been integrated or rejected in the evolution of the dominant narrative projected by the GOJ and Japanese tech companies. The absence of clear preoccupations with the social aspect of any urban projects is all the more noticeable in light of growing public concern about these issues and reports by international organisations stressing the increase in relative poverty (16 percent) and inequality (0.330 percent, above the 0.309 OECD average) in Japan in the last three decades (see OECD Economic Survey of 2012 in OECD 2017).

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