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Distributed Energy Systems in the Built Environment

European Legal Framework on Distributed Energy Systems in the Built Environment

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I. Introduction

1.1 Emerging decentralized energy systems

Distributed renewable energy supply systems are emerging. They constitute the “other” side of conventional centralized energy systems.¹ Scale and outer features of distributed energy supply installations are diverse and may vary from a single solar panel to a complete range of solar cells mounted on rooftops of private houses, condominiums, industry and office buildings, small wind parks, as well as biomass fermentation units digesting waste and biomass to be converted to energy, collective Combined Heat and Power systems (CHP), city heat distribution networks and decentralized “energy trading platforms”. Local generated energy is basically intended for local usage. In a number of scenarios consumers produce their own energy² and as such they are referred to as *prosumers*. A vertical integration of core activities i.e. production, supply, trade, usage and distribution may be reflected by organizations such as these. Facilitation of smart distribution systems (smart grids) i.e. the implementation of smart meters and integrated IT applications is also essential to enable easy access to these newly developed decentralized generation methods and at the same time stimulate an active involvement of local end-users in energy (ancillary) markets and to realize energy efficiency.³ These assets are conditional to ensure a proper integration of decentralized generation units and to secure operational security of transport- and distribution systems by balancing energy generation and demand. This requirement is an inherent condition arising from the inconsistent nature of wind- and sun energy generation.

Initiatives towards the architectural design and installation of distributed energy generation units are commonly developed by local market participants. Active involvement by municipalities has been established rather frequently as well. It appears that local governments increasingly tend to regard promoting renewable energy generation and distribution as their public duty in the interest of their specific institutional climate change and environmental policies. These governments have ample tools at their disposal amongst which the legal powers pursuant to the general provisions towards building construction under the Environmental and Spatial Planning Act.⁴ They have institutional power to conclude contracts for the

allocation of land on behalf of spatial development or towards participating in the establishment of new energy companies.⁵ Other tools available to local governments are granting loans, subsidies and warranties and setting a good example.⁶ In the light of the above energy policy is no longer a European and State affair and must therefore be regarded as an equally powerful tool towards strengthening local partnership.

Local energy facilities are expected to contribute significantly to the common objectives of European and national energy policies, such as the current climate change and environmental attainment targets.⁷ Of particular interest in this respect is the energy efficiency objective of 20 per cent in 2020 *vis-à-vis* 1990. The realization of this target depends largely on the built environment. At present approximately 40 per cent of global energy use takes place in urban settings.⁸ Most of the distributed renewable

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¹ Kari Alanne and Arto Saari, Distributed energy generation and sustainable development, Vol. 10, Issue 6, *Ren Sust Energ Rev*, 539 (December 2006).

² Louis Szablya, Distributed generation – when customers are generators, Vol. 88*4, *Electr Ligh & Pow*, 30 (July–August 2010).

³ Sabine Erlinghagen and Jochen Markard, Smart grids and the transformation of the electricity sector: ICT firms as potential catalysts for sectoral change, *Energy Policy*, Vol. 51, 895 (December 2012); Simone Pront-van Bommel, Smart Energy Grids within the Framework of the Third Energy Package, Vol. 20, *The European Energy and Environment Law Review*, 32 (2011).

⁴ Caterina Brandoni en Fabio Polonara, The role of municipal energy planning in the regional energy-planning process, Vol. 48, Issue 61, *Energy*, 323 (December 2012).

⁵ For example the municipality “Meppel” in the Netherlands, http://www.meppel.nl/default/nieuwveenselanden/nieuwveenselanden/OndertekeningSamenwerkingsovereenkomstLokaalDuurzaamEnergieBedrijfinMeppel/id_33180072 (accessed 11 Feb 2013).

⁶ Gabriele Comodi, Luca Cioccolanti, Fabio Polonara, Caterina Brandoni, Local authorities in the context of energy and climate policy, Vol. 51, *Energy Policy*, 737 (December 2012).

⁷ Joseph A. Clarke, Cameron M. Johnstone, Nicolas J. Kelly, Paul A. Strachan, Paul Tuohy, The role of built environment energy efficiency in a sustainable UK energy Economy, Vol. 36, *Energy Policy*, 4605 (December 2008); Mudarhir Ao akorede, Hashim Hizam, Edris Pooresmaeil, Distributed energy resources and benefits to the environment, Vol. 14, Issue 2, *Ren Sust Energ Rev*, 724 (2 Feb 2010).

⁸ University of Cambridge Centre for Sustainable Development, Energy Efficiency in the Built Environment en Grosvenor, Energy Efficiency in the Built Environment.

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energy generation installations are situated in these areas.

Opportunities towards the development of distributed sustainable energy units also depend on existing regulatory directives. The law laid down in the regulatory frameworks of existing Directives give rise to questions relating to conditions applying in regard to the installation and deployment of decentralized energy facilities under European legislation and case law. The intent of European legislation on local energy facilities is comprehensive. It is hereby assumed that the need to develop local energy generation and distribution systems will increase as a result of the current enhancement of European legislative energy efficiency requirements. On the other hand the implementation of local energy generation network systems must be consistent with the extensive range of general standards laid down in both the Third Electricity Directive⁹ and the Third Gas Directive.¹⁰ These regulatory frameworks also include rules for connection of third parties to energy distribution systems amongst which adequate regulation of such systems in the interest of consumer protection and access to energy markets. It is considered likely that the rules of these Directives may inhibit the installation and operation of local energy supply facilities. The European legislator also sets limits on collaborations as well as on procurement practices in regard to the installation and deployment of energy supply facilities by municipalities. A number of the provisions adopted by European legislation apply specifically to subsidy schemes and contract tendering by Member States. This paper aims to outline the stimuli provided by European law for promoting integrated planning of distributed renewable energy installations on the one hand and its limitations thereof on the other hand, also with regard to the role of local governments.

II. Energy Efficiency

Energy efficiency requirements have amongst other things become more stringent since entering into force on May 19, 2010 of the Directive (Energy Performance of Buildings Directive 2010/31/EU) on improving energy performance of buildings.¹¹ This directive imposes on Member States the obligation to define the energy performance requirements for new building designs whereby allowance must be made for differentiation,¹² for instance in regard to the impact of these enhanced energy efficiency requirements on the design of new buildings as well as the timeline applied for enhanced regulation to become effective. These energy efficiency-regulations cover a wide range of buildings.

It is explicitly stipulated that by 2020 all new (private) buildings must be nearly zero-energy building (carbon neutral).¹³ Generally defined, a net zero building is a building with zero net energy consump-

tion and zero carbon emissions annually.¹⁴ Buildings that consume slightly more energy than they produce are called “near-zero” energy buildings. For instance, a net-zero energy building generates energy through Photovoltaic panels, a wind turbine, or a biogas generator.

Full energy efficiency can after all be realized to a certain extent only by energy savings, i.e. insulation, or planning buildings with optimal advantage of the sun and away from the direction of harsh winds and by adapting energy production processes. Other additional facilities are necessary. As a result constructors and operators dealing with architectural design concepts for new houses, industries and office buildings are increasingly dependent on the technical design requirements for local energy generation and distribution. Also energy efficiency can be realized by direct connection of a building to a local installation for production of renewable energy such as wind, solar power, geothermal heat, bio-mass waste, waste heat and gas, flue gas and bio gases,¹⁵ or just by recapturing exhaust heat for (re)use.

In addition Member States need to assess the user function and local circumstances before determining the obligatory energy performance standards for new building designs. According to this Directive energy efficiency constitutes more than energy *savings*. For new buildings, Member States shall ensure that, before construction starts, the technical, environmental and economic feasibility of high-efficiency alternative systems such as, if available, decentralized energy supply systems based on energy from renewable sources, cogeneration and district or block heating or

cont.

How can Barriers to Energy Efficiency be Overcome?, Research Programme, p. 2; Joseph A. Clarke, Cameron M. Johnstone, Nicolas J. Kelly, Paul A. Strachan, Paul Tuohy, The role of built environment energy efficiency in a sustainable UK energy Economy, Vol. 36, *Energy Policy*, 4605 (December 2008).

⁹ Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211, 14/8/2009, pp. 55-93.

¹⁰ Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC, OJ L 211, 14/8/2009, pp. 94-136.

¹¹ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, OJ L 153, 18/6/2010, pp. 13-35.

¹² *Ibid.*

¹³ Art. 9 Directive 2010/31/EU.

¹⁴ Anna Joanna Marszal and Per Heiselberg, *Zero Energy Building definition – a literature review, A technical report of subtask A*, IEA-report 15.09.2011. This gives an overview of existing ZEB definitions.

¹⁵ Art. 2(30) Directive 2009/72/EC: renewable energy sources.

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cooling, particularly where it is based entirely or partially on energy from renewable sources and heat pumps, is considered and taken into account. This includes rooftop solar panels and the deployment of collective heating and cooling supply systems.¹⁶ However, the Directive is indistinct about the implementation of other collective decentralized energy generation models such as small manure installations (bio waste fermentation), small-scale wind turbines parks or a connection to a smart grid.

Member States have a mandatory duty to categorize site plans by size and user profile, i.e. terraced or semi-detached houses, condominiums, office buildings, hospital sites and other types of energy consuming buildings for the attainment of harmonized rating scales that must be applied to determine the minimum building energy performance standards.¹⁷

In the first instance the legal energy efficiency standards apply to new buildings. In general these do not regard existing buildings, excepting "major renovations".¹⁸ A major renovation is at stake in all cases where the landed renovation cost exceeds 25 per cent of the appraised property value compared to the value of the building shell or technical construction systems, i.e. without the land value, or when renovation plans encompass more than 25 per cent of the surface area of the building shell.¹⁹

EU Member States have a binding obligation to implement this Energy Performance of Buildings Directive in their national legal system by July 9, 2012 at the latest. In so far it is not (yet) consistent with the requirements in this directive.²⁰ Member States have discretionary power choosing the measures to implement these energy efficiency obligations. National governments tend to attribute responsibilities and authorities for monitoring and enforcement of mandatory energy performance standards to municipalities i.e. assessment of license requests for the construction or operation of generation capacity or taking appropriate action in the event of non-compliance with current regulations.

In The Netherlands it has meanwhile been adopted in both the Dutch Building Decree (*Bouwbesluit*) which is based on the Housing Act (*Woningwet*), as well as in national environmental legislation. The open-textured and general nature of the several requirements adopted in Dutch environmental legislation enables national (local) governments to a large extent to integrate the content of new EU provisions into existing legislation without adaptation simply by using a new interpretation for such respective requirements. So far as possible according to scope and text national legislation, any interpretation of the legal provisions in the assessment of license applications or enforcement of legal environmental requirements must be consistent with its underlying Directive's regulatory principle.²¹

The other Energy Efficiency Directive was published in the Official Journal of the European Union

on November 14, 2012 and its regulatory requirements have meanwhile taken effect on December 4 of that same year.²² Member States have a binding obligation to implement the Directive's provisions by 5 June 2014 at the latest.²³ This newly adopted Directive applies among other things to co-generation and heat supply and cooling systems. It presumes a mandatory authorization procedure of Member States for construction of new generating capacity, according to the Third Electricity Directive.²⁴ In case of large-scale production comprehensive assessment of the potential for the application of high-efficiency cogeneration and efficient district heating and cooling is obliged. Cost-benefit analysis have to be carried out in case of for instance a new thermal electricity generation installation with a total thermal input exceeding 20 MW is planned, in order to assess the cost and benefits of providing for the operation of the installation as a high-efficiency cogeneration installation. Also in case of new thermal electricity generation installations with a total thermal input exceeding 20 MW is planned, in order to assess the cost and benefits of providing for the operation of the installation as a high-efficiency cogeneration installation.²⁵ This directive includes several, abovementioned and other, incentives for district heating. And every new connection to a district heat system enhances energy efficiency in alignment with the principles of Directive 2012/30/EU as elaborated above. In addition this Directive imposes on national governments of individual Member States the obligation to attune a minimum of 3 per cent per annum of existing building stocks to the energy efficiency requirements that apply to all new buildings with an effective surface capacity of > 500m². This latter requirement constitutes a crucial supplement to Directive 2010/31/EU.²⁶

Effective July 9, 2015 this standard will be reduced

¹⁶ Art. 6(1) Directive 2010/31/EU.

¹⁷ Annex I.

¹⁸ Art. 7(1) Directive 2010/31/EU.

¹⁹ Art. 2(10) Directive 2010/31/EU.

²⁰ Art. 28(1) Directive 2012/27/EU.

²¹ Koen Lenaerts & Piet Van Nuffel, "European Union Law", 756-757 (3 edn., Sweet & Maxwell 2011); Case C-106/89 *Marleasing*; Case C-292/97 *Engelbrecht*; Case C-60/02 *Criminal Proceedings against X*; Jan H. Jans, Roel de Lange, Sacha Prechal and Rob J.G.M. Widdershoven, *Europeanisation of Public Law*, Europa Law Publishing 2007, Chapter IV, 99-111.

²² Directive 2012/27/EU.

²³ Art. 28(1) Directive 2012/27/EU.

²⁴ Art. 7(1) Directive 2009/72/EC.

²⁵ Art. 14(5) and (7) Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, OJ L 315, 14/11/2012, pp. 1-56..

²⁶ Art. 5(1) Directive 2012/27/EU.

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to 250m². It is the discretionary authority of individual Member States to impose this regulatory standard on local governments.²⁷

III. Local Geothermal Energy Installation Policy derived from Common European Energy Legislation

3.1 European energy legislation: general

Therefore European legislation encompasses various incentives for constructing and implementation of distributed energy systems. On the other hand, both the Third Electricity Directive and the Third Gas Directive then impose the conditions to be complied with in regard to the architecture of distributed energy systems and it is considered a likelihood that some of the provisions contained in these regulatory frameworks, will impede either the development of or affect local renewable energy siting decisions. Hereafter we shall assess the occurrence of the most likely impediments.

3.2 Consumer protection and competitiveness

We shall start by mentioning the rules that apply for consumer protection. Households and (facultative) companies and organizations with < 50 employees or an annual turnover or financial balance of <€10 million are entitled amongst others to gas and electric power supply at an affordable (reasonable) price,²⁸ which includes energy supply from local distributors. These consumers must be able to switch from one supplier to the next and therefore they should be granted freedom of choice of supplier. Suppliers must take caution not to counteract this right of free choice in their supply contracts. In addition households must have unrestricted access to energy supply even in the event of bankruptcy of their supplier. Besides these principles the Third Energy Directives comprise a substantial number of consumer warranty rights such as access to information and how to resolve disputes. Many consumer rights have been summarized in the Annex to this Directive. The requirements of this Annex are equally binding. In alignment with EU regulation Member States have a legislative authority to lay further financial, organizational and administrative standards on for instance energy suppliers. In The Netherlands for instance energy supply to households and other persons with a small connection tot the grid (normally small and medium enterprises) is subject to a supply permit from the Minister of Economic Affairs.²⁹ According to Dutch Law such licensed energy suppliers must be able to provide energy supply services on a national level. These national requirements in particular may jeopardize energy supply operations by small local companies that lack sufficient funds, manpower and who are not likely to possess the expertise required to meet these demands.

The other side of the consumer's right to freedom of choice constitutes the right of third parties to enter the energy market. A subsequent condition derived from this right is the individual's right of access to energy distribution networks³⁰ for the purpose of delivering electric power and gas to consumers who have chosen to purchase his home generated power. This requirement may be lifted only temporarily in the event of a capacity shortage.

Qualitate qua suppliers are entitled access to the distribution network that connects their customers to the grid.³¹ This measure equally applies to small-scale local power distribution networks aimed at synergizing decentralized generation, supply and demand. Every party connected to a local distribution network must at all times be allowed the right to contract suppliers other than their local producer/supplies, consisting to Citiworks judgement. This feature may involve an operational risk for local energy companies. It appears that an enforced freedom to change suppliers will lead to an exploitation risk for decentralized energy network facilities.

3.3 Regulation of tariff rates and tariff calculation models

The regulatory frameworks of both the Third Electricity Directive and the Third Gas Directive comprise specific guidelines for energy distribution network management, including local small-scale network operations. Distribution network operators have a binding obligation to determine their connection and transmission tariff rates for prior publication and in compliance with the mandatory standards of transparency and objectivity and non-discrimination.³² Energy distribution network operators must furthermore ensure that their tariffs are determined in conformity with a calculation model specified by the National Energy Authority.³³ Tariff application forms drafted by distribution network operators as well as the respective calculation methods applied are subject to an official screening by the National Energy Authority prior to being cleared for publication.³⁴ The mandatory responsibilities of distribution network operators

²⁷ Art. 5(1) Directive 2012/27/EU.

²⁸ Art. 3(3) Directive 2009/72/EC and Art. 3(2) Directive 2009/73/EC.

²⁹ Art. 95a (1) and 95d Dutch Electricity Act and Art. 43(1) Dutch Gas Act.

³⁰ Art. 32(1) Directive 2009/72/EC and Art. 32(1) Directive 2009/73/EC.

³¹ C-439/06, Citiworks AG.

³² Art. 32(1) and Art. 37(6) Directive 2009/72/EC; Art. 32(1) and 41(6) Directive 2009/73/EC.

³³ Art. 37(1)a Third Electricity Directive and Art. 41(1)a Third Gas Directive.

³⁴ Art. 28(2)b Directive 2009/72/EU and Art. 28(2) Directive 2009/73/EC.

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are further determined by the binding nature of the rules set out in both Directives.³⁵

The existing legislative EU requirements applying to energy distribution network management and ratification are widely scoped and aimed at covering main aspects only. This gives Member States sufficient latitude to design and implement local energy policies at their own discretion on small scale distribution systems, such as the introduction of different methods of exploitation and pricing *vis-à-vis* regular distribution network systems operations, provided such divergences from the prescriptive pathway are justifiable and warrant uniformity on the basis of objective criteria and non-discriminatory access conditions for connected parties. On the other hand, as a matter of fact, the administrative and functional obligations imposed by existing EU energy legislation may be an inhibiting factor for the exploitation of small-scale renewable energy distribution network systems.

In some specific situations the above energy distribution network regulation does not or be it partially apply. Reference is made to three types of networks: the so-called “closed distribution systems” internal” networks and “direct lines”.

In the first place there is the exception for networks categorized as closed distribution systems.³⁶ Although these networks own all the properties of a distribution network, individual Member States have legislative authority to exempt closed distribution systems from various binding requirements set out in the regulatory frameworks of the Third Electricity and Gas Directives. The scope of this exemption is however limited. Basically only businesses, offices and industrial sites meet the exemption criteria. Moreover the existing EU energy legislation applies to two situations only; exemption may be granted either for connected customers who, for specific technical or safety reasons, have integrated their exploitation activities and/or production process into those of their suppliers; or, if the energy network system is intended primarily to furnish electric power or gas to the energy utility or its affiliated companies only. Also, market participants must all be located within a restricted industrial or commercial perimeter zone. Household connections are basically excluded. Therefore this legal provision has no practical significance for distributed energy systems in which households participate.

In addition the scope of this exemption form regulation of networks is limited. This includes the requirement that tariffs must be granted by the National Energy and requirement for distribution system operators relating to the purchase of electricity when such a purchase is intended to balance energy supply and demand loads, only.³⁷ The remaining EU regulatory rules applying to energy distribution networks must be applied unconditionally for distribution systems.

This provision yields opportunity for the implementation of divergent energy distribution networks

to respond to local energy demand. However, Member States have no legal obligation to grant exemptions.

Besides the elaborated energy distribution network requirements and their exemptions the existing regulatory frameworks for energy supply and transmission systems categorically exclude distribution systems if they meet the conditions or criteria valid for “internal networks” and “direct lines”.

A distribution system qualifies as an internal network when the production of renewable energy is intended for private use by one party only and consumed on the same premises. In those situations distribution is not an issue to be considered. According to the EU energy Directives the term “distribution” applies to the transmission of electric power or gas by means of distribution networks services aimed solely at delivering energy to consumers, i.e. supply is excluded.³⁸ This legal definition implies that the connected end user (consumer) purchases electric power and gas from a third market party,³⁹ not self-supplied consumers through internal electricity logistics systems. However this subject needs further clarification. The question is whether this reasoning is applicable in situations where “home generated” energy is produced at a location other than on the producer’s own premises. The guidelines of the Directives do not appear to provide clarity, but the Dutch Electricity Act is quite clear on this.

According to this Act situations as described above require logistical activities enabling the transmission of energy through a distribution system and as such the EU regulatory requirements must be enforced.⁴⁰ This judgment relates to the adoption of the standard definition for power and gas pipelines networks in the Dutch Electricity Act, which is considered to be determinative with respect to enforcement of requirements on distribution network systems.⁴¹

According to the both the Third Electricity Directive and the Third Gas Directive direct lines do not regulated as distribution systems either. Although there is no explicit clause to that effect, exclusion criteria are contained in the design and system of the Directives. A direct line is electricity network a gas

³⁵ Art. 25 Directive 2009/72/EU and Art. 25 Directive 2009/73/EC.

³⁶ Michaël Hunt, *Private Networks and Closed distribution Systems: A Missed Opportunity?*, EU Energy Law and Policy Issues, ELRF Collection, Volume 3, Bram Delvaux, Michaël Hunt and Kim Talus (eds), Chapter IV, Intersental, Cambridge – Antwerp – Portland 2012.

³⁷ Art. 25(5) Directive 2009/72/EC.

³⁸ Art. 2(5) Directive 2009/72/EC and Art. 2 sub 5 Directive 2009/73/EC.

³⁹ Art. 1(9) Directive 2009/72/EC and Art. 1 sub 24, 25 and 26 Directive 2009/73/EC.

⁴⁰ Art. 1(1) I Dutch Electricity Act 1998.

⁴¹ Art. 1(1) I Dutch Electricity Act and Art. 1(1) c Dutch Gas Act.

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pipeline between an isolated user and an isolated production site or an electricity network connecting an electric power producer to a supplier for the purpose of facilitating an ongoing supply of energy to their own locations, affiliated companies and relevant customers.⁴² A marked distinction compared to an internal distribution network is its energy load dynamics feature. Direct lines provide multiple (legal) entity connections on both the demand side and the supply side of the energy supply chain. However the identification process for networks to be categorized as direct lines appears to be a complex process. For example the standards for their physical implementation i.e. (legally binding) provisions for connecting individual users may be either ambiguous or lacking. Also there is no definitive regulation as to the determination of the ultimate size of a geographical area to be occupied by a direct line.

The exploitation of direct lines is subject to government approval. EU Member States have the discretionary authority to make the unavailability of an energy distribution network system a condition for license approval. Also the required government approval may be denied on the basis of justifiable considerations to ensure the public service obligations stipulated in Articles 3(3), of both the Third Electricity and Third Gas Directives. In this light the Dutch government authorities will not approve license requests for direct lines supplying energy to households, according to the national legislation.

A third exception is made for natural gas grids distributing biogas that has not been upgraded to natural gas quality. Such distribution networks have explicitly been exempted from the energy distribution system requirements dictated by the Third Gas Directive.⁴³ The EU legal framework for energy distribution systems applies only to gas grids distributing upgraded biogas of a quality similar to that of the pipeline-quality of natural gas.

3.5 Unbundling

Furthermore the Third Electricity and the Third Gas Directive curtail the vertical integration of a range of energy supply activities. A separation of network operation of other energy business activities is a requirement. Therefore distribution activities of a vertically integrated energy company must be separated from energy activities such as production and supply so as to warrant a complete independence of network operation.⁴⁴ A distribution system operator has to be independent at least in terms of its legal form, organization and decision-making for other activities not relating to distribution. Financial accounting relating to energy companies' distribution networks operations and other activities must be kept separate.⁴⁵ However, full ownership unbundling is not mandatory, contrary to what was originally considered.⁴⁶ These new unbundling requirements may induce functional and organizational restrictions

caused by both the administrative and financial impositions for locally integrated energy distribution networks. Energy companies aiming to offer their connected end-users a full energy service package (including distribution) at an all-in-one tariff are stymied by this unbundling legislation.

Individual EU Member States have discretionary power to exempt vertically integrated electricity and gas companies with a delivery capacity of < 100.000⁴⁷ connected customers or isolated minor network systems from the unbundling requirements elaborated in this paper. Such exemptions are advantageous for local energy distribution network. However, all previously mentioned requirements, i.e. the right of unrestricted access to the energy network as well as distribution network system management remain fully applicable. The Dutch national legislator has not adopted the above exemption clause but indeed taken a further step in the regulation of the unbundling of energy activities by imposing the binding requirement of a full detachment of transmission and marketing activities, including ownership. This decision may hold a critical barrier affecting the integration process of local renewable energy sources. The legally binding requirement adopted by Dutch legislation to ensure a full separation of ownership is currently subject of a preliminary ruling procedure by the EU Court of Justice.⁴⁸

IV. Public-Private Partnerships, EU Procurement and State Aid Regulations

4.1 Introduction

As already elaborated in the first paragraph of this paper local governments have several models at their disposal to stimulate local energy production processes. These sources may vary but all government support can basically be classified as either utilization of public authority or incentivizing the private sector to invest in power generation.

⁴² Art. 2 sub 15 and Art. 34 Directive 2009/72/EU and Art. 38 Directive 2009/73/EC.

⁴³ Art. 1(2) Directive 2009/73/EC.

⁴⁴ Art. 26(4) Directive 2009/72/EC and Art. 26(4) Directive 2009/73/EC.

⁴⁵ Art. 31(3) Directive 2009/72/EC and Art. 31(3) Directive 2009/73/EC.

⁴⁶ Commission Staff Working Document – Accompanying the legislative package on international market for electricity and gas, Brussels, 19.09.2007, SEC(2007) 1179, pp. 58 and 59.

⁴⁷ Art. 26(4) Directive 2009/73/EC and Art. 26(4) Directive 2009/73/EC.

⁴⁸ The Supreme Court of the Netherlands ("Hoge Raad"), Case number "LJN: BQ9214" of 24 Feb. 2012 and C-105/12, C-106/12 en C-107/12.

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The execution of institutional powers is hereby mainly viewed as the utilization of public authority in areas related to environmental law: by providing both the frameworks necessary to ensure an appropriate integration of new spatial developments as well as by defining the legal structures for licensing procedures.⁴⁹ Practicing such authority on a local level is an imperative criterion towards the realization of a flexible integration of local energy networks, with the exception of renewable energy generation units that qualify for exemption, such as solar panels and solar thermal collectors. However, the installation and operation of most local energy generation schemes remain subject to spatial measures and require one or more approvals or licenses. Restraining factors that may cause the necessary spatial decisions to stagnate are mostly legislative in nature. Therefore this pathway will not be explored further in this paper.

From a EU regulatory perspective it may be more rewarding to assess the impact of EU energy legislation on the private involvement of local governments in regard to procurement and/or State aid approval relating to the implementation of local energy networks. For the purpose of responding adequately to the issue of public-private partnerships this paper will further elaborate on the different types of collaborations in spatial exploitation in alignment with the overall land use and spatial development planning as evolved in The Netherlands over the past decades. Each partnership model will be evaluated as to its suitability for collaboration specifically in relation to the integration of local energy networks. Subsequently these models will be subjected to a further assessment in regard to their procurement features, followed by a concise characterization of the impact of legislation in relation to State aid.

5.2 Public-private partnership models

The collaboration between governments, i.e. local governments and market participants in particular, has known a decennia long tradition. In the late eighties of the 20th century, for example, houses for private ownership were built increasingly in the middle-income segment which attracted market parties to invest in the real estate market.⁵⁰

This tradition of public private partnering (PPP) has meanwhile developed into a range of strategic partnership formation models for spatial development underpinned by a variety of responsibility shifts between municipalities and private market partners.⁵¹

The first model concerns *municipal land use*. This concept provides an overview of municipalities and their role in land acquisition. The local government (municipality) must procure the required spatial areas, if necessary (also) by invoking the institutional priority principle adopted in Dutch legislation (whereby the dwelling contract stipulates that the land or real estate owner must subject the property to preference bidding by local authorities prior to putting it on the market)

and by expropriation; these sites are subsequently prepared for construction and issued as building plots. Municipalities have substantial authority in determining the allocation of spatial areas within the legislative common frameworks set for spatial development. In addition, municipalities in this model are entitled to a 100 per cent share of any profits derived from land use. These conditions were a crucial contributing factor for various municipalities to engage in the purchase of significant tracts of land during the years when large-scale construction projects were being developed. Obviously municipalities must be prepared to absorb the considerable array of financial risks associated with these transactions in so far as they have not been covered by government grants. In the past local governments in various districts trying to employ this model were stymied by market participants holding a land position who succeeded in acquiring self-realization rights for community capacity development based on “proof of substantial means for realizing development through effective direction and control”. At present the municipal land use model has lost its popularity as a result of the major risks involved in property ownership. Municipalities who wish to procure land will have to amply consider both the risks of being stuck in the property chain – and the financial (interest) burdens attached to it, since in the past years the real estate and property market has almost completely shut down.

The second model is a *claims-based* approach to authorization, which is further identified as the building claim model. In this scenario project developers are obliged to transfer the title of the land to the territorial authorities in exchange for a “building claim” ensuring the developer’s right to build a specified number of properties on an agreed number of plots to be allocated in due course. Any risks pertaining to land use planning in alignment with the requirements of the building claim model will in principle remain the responsibility of the respective local authorities, which aspect is similar to the provisions applying to the active land policy scenario. Likewise, the procurement of land as well as facilitating its site preparation both fall within the scope of municipal duties. The critical difference between the municipal land use model and the building claim

⁴⁹ P.J.J. van Buuren, A.A.J. de Gier, A.G.A. Nijmeijer en J. Robbe, *Hoofdlijnen ruimtelijk bestuursrecht*, achtste druk, Kluwer, Deventer 2010.

⁵⁰ A.G. Bregman, D.A. Lubach, H.M.A. Aarts, P.J.M. van Joolingen, T.J.M. Meijer, A. Wolting en B.G. van Zadelhoff, *Publiek-private samenwerking als uitvoeringsinstrument van het VINEX-beleid*, Instituut voor Bouwrecht, Akro Conslut en KPMG Meijburg, Den Haag, 1997.

⁵¹ A.G. Bregman en R.W.J.J. de Win, *Publiek-private samenwerking bij de ruimtelijke inrichting en haar exploitatie*, Bouwrecht Monografie nr. 26, Kluwer, Deventer, 2005, p. 16 e.v. en p. 279 e.v.

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model is the municipality's right to procure all the land that is needed for urban expansion, without having to observe obligations to ensure the mandatory right of future land use allocation of other market participants, whereas the building claim model is intended explicitly to emphasize the compulsory nature of the land use allocation principle. Building claim agreements were negotiated at a time when the real estate market – the housing market in particular – was assumed to contribute to a steady state economy. In many instances properties were purchased by municipalities and resold to the respective market participants upon site preparation immediately upon the achievement of the targets set down by market participants on the sale or lease of their real estate. The slowing growth caused by the ongoing financial crisis has impacted the housing market and its stagnancy forces many local governments to absorb their losses as well as the interest rates on unsold land plots.

A third partnership approach is the *joint venture model*, which is a concept whereby municipalities and market participant(s) jointly set up an independent land-use planning agency (in Dutch *grondexploitatie-maatschappij*, which is usually abbreviated to GEM) for the sole purpose of transferring the land plots that are intended for territorial planning. Such a joint venture is responsible for both the site preparation and the allocation of land use. Qualitative qua the agency may be characterized as a *privatized land plot on a territorial basis*. In this joint venture model the risks of land use are shared between the municipality and the market participant(s), which shares are generally agreed on a 50/50 basis. In addition to fulfilling a key role in land use the GEM also proposes pre-construction designs towards the realization of development schemes for building sites.

A marked difference between the joint venture model and the models described earlier is the shared responsibility feature; in the above-mentioned models the risk of land use is basically the responsibility of municipalities, whereas in the joint venture model this risk is (equally) shared between the municipality and the market participant(s). In previous years, when the economy was booming, the joint venture model was in high demand by municipalities as well as market participants. Risks and control were equally shared and both parties benefitted from the increasing revenues on land prices. At this point in time revenues are decreasing and even stagnating entirely and a growing number of joint ventures are dealing with financial difficulties or find themselves dissolved.

Then there is the *concession* model, a model that places the risk of land use entirely with private market participants. In this model such private participants are being allocated all the land on a particular location (by active acquisition from its original owners and/or purchase of the land from municipalities). Site preparation is done both at the expense and for the

account of the respective market participant(s). In this concept land use and property development are kept strictly private. In so far as land-use planning and development within their jurisdictions is concerned the role of local governments is determined only in regard to implementing and monitoring the requirements package to be complied with by the respective market participant(s).

The last model referred to is the institutional design of *self-realization* which concept is underpinned by the land positions taken up by landowners. The term “self-governance” reflects the legal position of property owners to challenge the right to take their land by invoking the legal self-realization-act, on the assumption that they enter into binding agreements prior to the enforcement of spatial planning authority by municipalities.⁵²

Several models for a cooperative strategic goal oriented planning of spatial development have been tested and found beneficial by local governments, of whom municipalities in particular.

First, municipal land use and development is useful in scenarios of complete ownership by local governments of either the land or the real estate envisaged for the realization of the particular renewable energy installation. The city council may decide to sell or lease the respective land or real estate to any private market participant who undertakes to realize and operate the energy network.

Another scenario is possible, viz.: the function of the respective real estate has been determined a public unit and may therefore not be transferred to the energy company, neither by sale nor by lease. In such situations the energy infrastructure, being encompassed by the existing real estate from a constructive point of view, may be eligible for implementation by limited right, i.e. surface rights. As a result of such a limited right the (local) energy exploitation company maintains the property rights of the energy infrastructure, whereas the municipality remains the proprietor of the real estate.

Taking the *building claim model* on the other hand may be more problematic. It may be assumed that energy exploitation companies do not procure land solely for the purpose of obtaining self-realization rights towards the operation of an local energy infrastructure.

An entirely different scenario may be demonstrated by the *joint-venture* model. As mentioned earlier in paragraph 1.1 there are several examples of local governments partaking financially in local energy companies. It is highly likely that this scenario will become common practice in the near future. Municipalities will have the opportunity to invest both in

⁵² See Ernst van Gelder, Hendrik van Sandick en Joop van den Brand (red), *Handreiking Grondexploitatieplan*, 2^e druk, Sdu uitgevers, 2010.

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local energy exploitation holdings owning and controlling several local energy infrastructures as well as in special purpose vehicles, set up by local governments and one or more (local) energy companies so as to control a specific local energy infrastructure. As demonstrated in the joint-venture model on behalf of land use within the planning and development framework stakeholders may decide to share the risks and authorities so as to intentionally create a mutual dependency between market participants. Another scenario may be energy-companies taking up a majority stake in special purpose vehicles. In such a scenario the role of the municipality is curtailed to that of the provider of venture capital rather than that of an equal partner with complete authority.

The self-realization model is an equally workable scenario. As is the case in institutional land use and development the role of the municipality is that of a public provider of tools towards the realization and exploitation of a local energy facility whereby the local government authority does not embark into a functional partnership. A distinctive feature of this model is the existing ownership of the site that is envisaged for the realization of a local energy infrastructure by private partner(s), implying that prior land or real estate transfers between the municipality and energy-company are not required. It goes without saying that any costs incurred in local government intervention (i.e. planning, and/or adjustment of infrastructure in the immediate surroundings) are subject to reimbursement by the energy undertaking by prior agreement for which the local government authority agrees to fulfill the necessary spatial obligations and issue the required permits.

The *concession* model does not appear to have any specific meaning in regard to local energy facilitation. A key feature of the concession model on land exploitation within the concept of territorial development is that the preparation of sites and the development of the public area are the responsibility of private market participants. The duties of energy companies do not include such activities. However, it is conceivable that energy companies participate in market company consortia negotiating territorial development on the basis of the described concession model and in which scenario energy companies focus exclusively on the realization and operation of local energy networks as part of that specific territorial development.

4.3 The meaning of European procurement

The European Procurement Act curtails the freedom of (local) authorities to negotiate with market participants. In conformity with the government procurement Directive any public service contract exceeding the so-called threshold amount is subject to being awarded within the EU. This regulatory principle restricts (local) governments to negotiate agreements with market participants other than those who comply with European procurement requirements.⁵³

It is common practice that in partnerships between governments, local governments in particular, and private market participants on land use and development, preference is given to creating synergies with market participants who do not qualify for a EU concession. The underlying factor of such preference is the territorial land ownership of the respective market participant(s) in the land development perimeter on the one hand as well as the qualitative standards or previous experiences with some of these market participants on the other. In certain situations municipalities aim at subjecting market participants to a private selection process between a number of well known and reliable market participants rather than following the EU procurement procedure which may lead to synergies with unfamiliar market participants.

Any previous discretionary allowances awarded to local governments and private market participants for the purpose of creating their own strategic partnerships so as to not only respond to desired project characteristics but also to share responsibility, costs, revenues and development risks have significantly been reduced as a result of a series of rulings by the European Court of Justice in the past decade. An important lesson for the Dutch practice of land development can be derived from the *Scala* ruling:⁵⁴ land ownership by a market participant does not imply his right to (have) realize the implementation of public utilities on that land, if, in view of the nature of such implementation, its realization is subject to a tendering procedure. The public service contract may however be delegated on behalf of the contracting authority to any legal persons under national law, which person or persons undertake to fulfill the contractor's responsibilities under the provisions for public service contracts within the scope of the Directive.

The Commission/France ruling⁵⁵ demonstrated that such a deferred partnership is approved only, if the relevant market participant has a right of self-realization *vis-à-vis* the respective public service contract.

Therefore, consistent with European jurisprudence derived from these EU Court rulings, local authorities failing to comply with the condition of prior European tendering when awarding public contracts exceeding the current threshold set at €5.000.000,- (excluding VAT) are in violation of the EU procurement Act. The same applies for public works concession contracts of which the total expenditure remains within the boundaries of the regulatory financial threshold, but

⁵³ See E.H. Pijnacker Hordijk, G.W. van der Bend en J.F. van Nouhuys, *Aanbestedingsrecht, Handboek van het Europese en het Nederlandse Aanbestedingsrecht*, Sdu uitgevers, vierde druk, 2009.

⁵⁴ Case C-399/98 Ordine degli Architetti et al. known as "Scala".

⁵⁵ Case C-264/03 Commission v. France.

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in which case the contracting authority could be liable for breach of the principles set by the Directive if the availability of sufficient cross-border opportunity was not considered.⁵⁶

The current position in jurisprudence relating to procurement and land use development (particularly after the Müller ruling of the EU Court of Justice⁵⁷) may be explained as follows: projects relating to spatial development and owning the properties of a public service concession will be subject to mandatory procurement standards laid down in the EU procurement Directive if *all* three of the following terms are met: the government derives a direct economic interest from the land and/or its real estate (e.g. in the event of the establishment of a public service facility); the land is augmented with a construction obligation; the requirements imposed by the municipality fall outside the scope of public law. The latter implies that the conditions of an agreement imposed by the municipal authority are not in alignment with for instance the provisions of the respective zoning scheme. If, in addition to these three requirements, the previously mentioned threshold amount is exceeded, the respective project falls within the scope of compulsory EU tendering.

In the interest of partnership authorization between local governments and energy companies as well as other third parties *vis-à-vis* the establishment of local energy networks under the European procurement Act two relevant questions need to be answered: (1) is the project a government contract as defined in the European procurement Act? (2) If so, does the estimated value of the contract fall within the regulatory scope of the Directive, i.e. does the budgetary ceiling of the public service contract constitute a constraining factor in the sense that its total value qualifies for subjection to the regulatory obligation of local governments to call for tenders within the EU?

Following the Müller ruling European tendering is a mandatory requirement for public concession contracts awarded for the implementation of local energy infrastructure that (may) exceed the regulatory threshold of €5.000.000,- and if *in addition all three* of the conditions specified in the Müller ruling are complied with.⁵⁸ It is hereby assumed that obligatory European tendering will not occur frequently in day-to-day practice. In the event of municipal land plot emissions or self-realization the participatory role of local authorities will be primarily that of facilitator.

The responsibility for initiating activities towards the integration of local energy networks lies with the private undertaking and also the inherent risks of realization and operation are for the account of the undertaking. This feature is not in alignment with the mandatory realization requirement nor does it authorize private undertakings to impose standards for connections that exceed the extent of the requirement package available to municipalities.

Differentiation from the above is obtained in special

purpose vehicle scenarios set up to architecture the integration and operation of a local energy infrastructure. If a special purpose vehicle participation model is used by a local authority to enable the de facto implementation of additional (technical) requirements as well as impose a mandatory realization obligation in the contract, it must be considered fairly likely that there is ground for a European procurement obligation – in conjunction with the public features of the energy network as highlighted by the standards of the procurement Directive 2004/17/EG dated 31 March 2004, containing coordination of procedures for the submission of tenders in the water and energy supply, transportation and mail services – when in addition the threshold amount is exceeded.⁵⁹

The realization of local energy network implementations exceeding the regulatory threshold that may be achieved through a central vehicle whereby municipalities – in addition to the authoritative powers vested in them to impose a realization obligation simultaneously hold a (co) decisive position in the determination of (technical) standards towards the land use planning concept – must be subjected to EU tendering. A justification for any municipality awarding a public concession to an energy company without prior European tendering may be found in the decentralized form of decision-making in which government decisions are subject to the process of collective action in a special purpose vehicle and in which the government institution has no authoritative power to impose standards, nor to enforce such realization either within the undertaking or on the basis of an agreement between the special purpose vehicle and the municipality.

4.4 Impact of State Aid Measures

The objective for EC State aid regulation is to create opportunity for fair and equal participation for all undertakings on the Community market. Any discriminatory government measures that may yield unfair competition by creating unequal benefits for undertakings or the productions by such undertakings are therefore prohibited.

⁵⁶ Case C-412/04 Commission v. Italy; Joined cases C-147/06 and C-148/06 SECAP and Santorso.

⁵⁷ Case C-451/08 Helmut Müller GmbH v. Bundesanstalt für Immobilienaufgaben.

⁵⁸ *Reiswijzer Gebiedsontwikkeling 2011, een praktische routebeschrijving voor marktpartijen en overheden*, uitgave van de Ministeries van Binnenlandse Zaken en koninkrijksrelaties en van Infrastructuur en Milieu, de Neprom, de VNG en het IPO, p. 73 e.v.

⁵⁹ In this respect and consistent with Art. 3, paragraph 3 of the Directive on electricity regulation the below mentioned procurement activities meet legal obligations:

- a) the provision or operation of fixed networks intended to provide a service to the public in connection with the production, transport or distribution of electricity or
- b) the supply of electricity to such networks.

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The term “State aid” is appropriate when an economic benefit has been granted to a favored undertaking for a situation that does not qualify for assistance under regular market conditions. The situation can also be defined as one in which a government authority unilaterally (“so as not to”) grants a subvention to an isolated undertaking. The term “State aid” is appropriate only when reciprocity for an eligibility determination by way of a direct and equivalent consideration by the beneficiary is not in order. State aid is subject to mandatory notification. Upon receipt of a notification of a State aid scheme the Commission will initiate formal proceedings for the purpose of investigating whether the program is compatible with the relevant provisions relating to the interest of the common Market.

4.5 State aid and land transfers

In order to adequately respond to queries on the subject of State aid the first issues of interest are the conditions of the Treaty concerning the functioning of the EU (TFEU). This Treaty is an adapted version of the Treaty on the foundation of the European Community (generally referred in short as EC). Article 107 TFEU (ex Article 87 TEC) – Notion of State Aid and Derogations is made of three paragraphs. The first paragraph lays down the definition of “incompatible” State aid as follows: “Save as otherwise provided in the Treaties, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market.”

It may therefore be concluded from the first paragraph of Article 107 (TFEU) that State aid is granted when *all* of the following requirements are met:

- State aid is granted by the government or financed with government funding;
- State aid must represent an economic benefit to the undertaking(s), a benefit that could not be obtained through regular commercial channels;
- The grant is of a selective nature, implying that it will benefit (a) certain undertaking(s);
- The respective advantage must either distort or threaten to distort competitiveness and substantiate a (potentially) positive impact on cross-border economic activities.

Similar to the existing regulation on public procurement the approval of state aid applications is subject to financial thresholds. To that effect the EC Announcement No. 69/2001 on State aid refers to Articles 87 and 88 of the Treaty to *de minimis* aid.⁶⁰ The *de minimis* rule sets a ceiling below which State aid is deemed not to fall within the scope of Article 107(1) TFEU and is therefore exempted from the notification requirement laid down in Article 108(3) TFEU. State

aid granted over a period of three (financial) years and amounting to less than €200.000,- that does not affect cross-border trade in a negative manner nor distort or threaten to distort competitiveness is not regarded as State aid within the meaning of Article 107(1) TFEU. The threshold, initially set at €100.000,- in Regulation (EC) No 69/2001, has meanwhile been doubled. Moreover subventions granted under specific circumstances and conditions may be justifiable on grounds of the provisions of current Community guidelines on State aid for environmental protection.⁶¹ However, chances are small and its practice explicitly requires customization.

In order to avoid State aid in land use development it is imperative that land transfer is effectuated strictly at documented market conditions. Furthermore the remuneration agreements for activities must be competitive. Financing an unprofitable management may also be considered as State aid liable for mandatory notification. In accordance with an announcement from the European Commission in 1997⁶² a competitive estimate of land and real estate value may be documented in two ways: “by conducting an open and unconditioned bidding procedure (comparable to an auction) or by prior independent expert evaluation of the market price.”

Besides land transfer there are other transactions that may incur the risk of State aid. When selecting market participants such a State aid risk may be present in financing a negative outcome or supporting an unviable management. Regulatory interventions on granting State aid for instance do not counteract the rules on institutional investment in unprofitable projects. Following the EC ruling in the Dutch Marktpassageplan Haaksbergen endorsing State aid for the purpose of closing a budgetary negative balance is permitted if by doing so the government provides the minimal asset so as to ensure its progress in the public interest. Providing State aid in favor of the budgetary deficit in the Haaksbergen case is categorized as State aid under the EC guidelines and as such the endorsement is subject to notification, whereas the Commission has the discretionary power to declare this case compatible. It must remain transparent that if upon subsequent calculation the actual result turns out less negative (or even positive) the difference between the actual negative balance and the original negative estimate must flow back fully to

⁶⁰ Commission Regulation (EC) No 69/2001 of January 2001, on the application of Articles 87 and 88 of the EC Treaty to *de minimis* aid. Official journal of the European Union of 13 January 2001, L 10/30 *et seq.*

⁶¹ Commission, Community guidelines on State aid for environmental protection, OJ C 82/01.

⁶² Commission Communication on State aid elements in sales of land and buildings by public authorities, OJ C 209/3.

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the municipality. In order to warrant such eligibility reciprocity it is important that a reciprocity clause is adopted as an additional feature of public contract standards.

As mentioned in paragraph 1.1 local governments have the means of incentivizing local energy companies by granting loans, subsidies and warranties. These arrangements, if and in so far as they are not intended for consumers but for enterprises, energy companies in particular, clearly encompass the risk of State aid. In the event of municipal land transfers or the awarding by local authorities of for instance surface rights for the purpose of integrating a renewable energy infrastructure into an architecturally intertwined existing property, these transactions must be effectuated by definition at competitive conditions and upon valuation of the land and buildings by an independent expert. As the market value of land is generally calculated residually and its value is dependent on the properties of the intended real estate realization, it is paramount that ratification is based on reliable profitability estimates. This process requires specific expertise to which effect consultation of independent professionals must be considered.

Additional focus is required on financial grants to energy companies for the purpose of stimulating the implementation and expansion of local energy generation facilities which is an essential condition in regard to the *de minimis* exemption clause, i.e. the three year threshold of €200.000,- that applies for energy companies. Financial contributions by other (local) institutions may negatively affect the State aid position of certain undertakings. This may be the case in land transfers from local institutions to energy companies as well as in the establishment of local energy infrastructure by energy companies on prior (privately) procured land. In short: a timely assessment of envisaged financial agreements between a municipality and the energy infrastructure operator is a crucial condition for determining the applicability of both the *de minimis* clause and Community Directives in regard to State aid on ecological grounds. In addition, contracting an independent expert may be equally worth considering so as to avoid problems as a result of the applicability of State aid regulation standards.

V. Conclusion

Distributed (local) renewable energy systems have developed only recently. There is however no consensus on a definition that may fit the description of a distributed local energy system. We have therefore tried to define these distributed, local energy systems by describing a number of their key features and concluded that there are substantial differences in regard to fossil energy sources and large scale generation, including delivery and transport methods employed by incumbents. Energy distribution from

local generation sources is not only a matter of emerging (renewable) energy companies and technologies, but it also involves different “actors”, roles, and agreements and induces a growing interest of local governments and local energy policy.

EU energy legislation provides the various requirements and incentives that are essential for a successful implementation of distributed energy systems, in particular a series of European energy efficiency requirements, which have been adopted. Of particular interest is the recently adapted Directive on energy efficiency for buildings (2012/31/EU). As a result of stringent regulatory interventions on behalf of energy efficiency the need for distributed (collective) generation increases.

On the other hand, European legislation lays down a number of requirements to be adhered by constructing and exploiting distributed energy systems. The Third Electricity Directive and the Third Gas Directive both comprise a substantial range of rules aimed at protecting energy consumers in relation to energy suppliers and at protecting users in relation to distribution network system operators and finally aimed at ensuring open and unrestricted market access for third parties. Consumer protection regulation is as yet aimed at passive end-users in their capacity of customers purchasing energy from large-scale energy companies rather than at *prosumers* i.e. energy consumers who engage in local energy generation and supply. Moreover distribution system operators must comply with a number of rules adopted by EU energy legislation.

These rules do not directly limit the implementation of local energy systems but they may affranchise extensive functional, administrative and financial burdens for small energy distribution companies. This also may be the case in regard to provisions such as free choice of energy supplier, the elaborated unbundling requirements in relation to distribution system management and tariff regulations.

Judicial impediments for implementing local energy distribution systems are mostly the result of the adoption of national legislation standards derived from the regulatory frameworks of The Third Electricity Directive and the Third Gas Directive. EU-Member States have discretionary power to impose additional standards in energy legislation and as such it is the prerogative of national governments to implement very explicit standards for energy distribution networks operations and ratification in their legislation. Compared to EU legislation the Dutch energy legislation imposes more stringent regulation on for instance distribution system operators, as is the case for unbundling, in particular since Dutch legislation did not make use of the exemption clauses provided by EU legislation. Furthermore Dutch law has adopted stringent rules on distribution network ownership. A 100 per cent share ownership by governments of distribution network systems registered in the name(s)

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of legal entities must be warranted,⁶³ with the exception of closed loop distribution network systems. This latter standard has not been adopted by EU legislation.

In case of participation and financial support of local governments other restrictions could be at stake. In so far as the restrictions on State aid and procurement are applicable for local distributed energy systems in accordance with EU regulations the following is of importance. EU regulation on procurement rights does not necessarily entail serious interference with jurisprudence currently applied. The initiative towards the integration as well as the inherent implementation and operational risks of local energy infrastructure lies with the private undertaking. This feature is not in alignment with the mandatory realization requirement nor does it authorize private undertakings to impose standards for connections that exceed the extent of the requirement package available to municipalities. The tendering obligation does not apply for this scenario.

The implementation of distributed energy systems exceeding the threshold amount set at €5.000.000,- and which are financed on the basis of a special purpose vehicle construction, meaning that the role of the municipality is that of a (co) decision taker in regard to the determination of technological requirements as well as having authoritative power to subject the project to an obligatory realization, must be procured within the EU.

A timely assessment by an independent expert of the public-private arrangements as well as a proper survey at an early stage of State aid opportunities on the grounds of both *de minimis* clause and the Community Directives in regard to State aid on ecological grounds are considered a crucial condition so as to avoid (financial) problems incurred in State aid grant programs.

⁶³ Art. 93 Dutch Electricity Act 1998 and Art. 85 Dutch Gas Act.