

Regulating public-private modalities for organising technological innovations in the energy sector

An ex-ante analysis framework for legitimate forms of PPP

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Introduction

This paper is about safeguarding public interests by promoting innovation in the energy sector. The Dutch government, by *concluding* climate accords at national and international level, has for instance committed itself to the target of 20 per cent of energy consumption in its area being of renewable energy by 2020. To achieve such sustainability ambitions the government is reliant on technological innovations in the energy sector. To give these technological innovations an actual chance of success, the Dutch government is initiating policy projects with private parties in partnerships. An example of such an initiative is the *Salland Green Gas project*. Taking the Salland Green Gas project as a basis, this paper illustrates that public interests can have innovation as an object and that policy tools (as safeguarding mechanisms) must respond to the dynamism in innovation processes. We go on to present an ex-ante analysis framework to be used for the selection of legitimate forms of PPP. The analysis framework is presented as a phased plan in which an attempt is made to find a balance between the legal-administrative values of effectiveness and legitimacy.

Changing governance structures in the energy sector through a dynamic of public interests

There have been many developments in the energy sector in recent decades. One of the most striking changes is the splitting of the integrated energy companies, with the separation of the network activities from the production and supply activities. These activities have then been placed in newly established organisations, which have been coordinated differentlyⁱⁱ. Firstly, network companies have been set up. These companies are responsible for the network activities and are regulated hierarchically within the circle of government (Kist et al, 2008). Secondly, production and supply companies have been set up. The activities of these organisations have actually been placed at a distance from the government, which means that the operation of the production and supply companies takes place in the ‘free market’ⁱⁱⁱ.

The concept of public interest is important to understanding the energy sector reforms. In its report “The safeguarding of public interest” the Dutch Scientific Council for Government Policy (WRR) makes a distinction between three types of interest, that is: (i) individual, (ii) social and (iii) public interests (2000: 19)^{iv}. This categorisation furthers the conceptual definition of public interest. First of all, the WRR defines social interests as interests in which protection for society as a whole is desirable (2000: 20). The WRR then gives substance to the

concept of public interest by stating that a social interest becomes a public interest if the government is concerned about the protection of a social interest on the basis of the conviction that this interest will not otherwise be done full justice (2000: 20)^v.

The energy sector reforms are the result of political stands on public interests. A number of parties have an important position in this debate. First of all, the European Commission is important: it can actually be regarded as the great protagonist of the liberalisation wave in the energy sector. The Commission puts the interests of a properly functioning internal common energy market and consumer protection at the forefront in the policy choices underlying the European liberalisation directives (Kist et al, 2008: 13). In this market the consumer has freedom of choice. As a result the consumer is not dependent on just one provider (a monopolist) for energy. This means that the buyer of energy can make a comparison between different producers and suppliers and can then select the provider that (best) meets its energy demand. The idea is that as a result of this confrontation of supply and demand the price mechanism steers buyer and producer towards an optimum transaction.

Despite the European impetus in the liberalisation of utility sectors, the degree of liberalisation and the approach to it differ from one member state to another (Wilkeshuis 2010: 35). Implementation in fact counts among the powers of the member states (see Wilkeshuis 2010), which is where the positions of national authorities, such as the Minister of Economic Affairs and the Dutch parliament in the Netherlands, come into the picture. Initially, the thinking of the Dutch Minister was that a properly functioning internal common energy market, with associated consumer protection, could be achieved by positioning the integrated energy companies in the market as a whole, in short for production, distribution and network management together. According to the Dutch Minister of Economic Affairs, the realisation of this thinking would require a privatisation drive of the integrated energy companies after the liberalisation wave. This proposal however was resisted by the Dutch parliament. In the political debate the parliamentarians did not just attach importance to the public interests mentioned above. They raised the fact that security of supply and distribution network quality also had to be safeguarded. This was because the members of parliament feared that these interests would come under pressure if the activities of the integrated energy companies were to be placed entirely remote from the government. The outcome of the political debate is that the public interests mentioned above are safeguarded by separating the energy networks economically and legally from the production and supply of energy^{vi}.

Simultaneously with the liberalisation of the energy sector and the resulting splitting of integrated energy companies, the theme of climate change has moved higher up the political agenda. In recent decades society has made an increasingly emphatic appeal to the government to combat changes in the climate. This social interest has been picked up by the government and therefore become a public interest. The “New energy for the climate” work programme expresses this transformation. The report illustrates that the government is accepting its responsibility in the field of climate change. The document sets out how the Netherlands will have one of the most efficient and clean energy supplies in the European Union by 2020 (VROM 2007: 3). To achieve this ambition, central government has concluded administrative accords^{vii} on climate and energy with local authorities. Agreements have also been made with the business community, which are set out in so-called sustainability accords^{viii}. The policy initiatives for combating climate change are formulated in both the administrative accords and the sustainability accords. The following targets are key to the policy: (i) a 30% cut in greenhouse gases by 2020 compared with 1990, (ii) an energy conservation percentage of 2% per year, and (iii) a share of renewable energy sources of 20% in 2020 (VROM 2007). To achieve these policy objectives, public and private parties are

collaborating on innovative sustainability projects. An example of such an initiative is the Salland Green Gas project (see text box 1).

Text box 1: Green Gas Project

On 14 January 2009 central government and the Association of Provincial Authorities (IPO) signed the Climate and Energy Accord between central government and provinces. By signing the accord the provinces are endorsing the importance of the national and European sustainability ambitions. The parties also agree that in addition to their statutory task, the provinces will contribute to the achievement of the climate objectives as they see fit and if necessary with other public and private partners.

Even before the signing of the Climate and Energy Accord by central government and the IPO, the importance of sustainable development had been identified and recognised by the Province of Overijssel, as is expressed for instance in the Overijssel Energy Pact Programme. With the energy pact the province is for instance aiming at a cut in CO₂ of 30% by 2020 compared with 1990 (Province of Overijssel 2008). According to the province, this target can be achieved by an intensive and long-term approach, in which partnership arrangements are concluded with partners in the policy domain. This approach has two spearheads, that is: (i) energy conservation in households and businesses and (ii) sustainable generation of energy. The plans for sustainable generation of energy have been formulated by the province in the Bioenergy subprogramme.

The Bioenergy subprogramme is a major component of the Energy Pact for the reduction of CO₂ emissions and will attempt to achieve 52% of the total CO₂ reduction. To achieve this percentage the province is for instance making efforts to get the production and supply of biogas and/or green gas to consumers (households and/or businesses) off the ground. A critical success factor for the production and supply of both biogas and green gas is a regional energy infrastructure. This infrastructure is called a Green Gas Hub. A Green Gas Hub is an infrastructure for the production, supply and offtake of Green Gas. Producers of biogas, such as pig farmers and market gardeners, supply their biogas to a central plant through a pipe. In this central plant the biogas is upgraded to natural gas quality (green gas) and the end product can be fed into the natural gas network.

The ambition for a Green Gas Hub has been embedded in a concrete project by the Province of Overijssel. As the Green Gas Hub is being implemented in the Salland area, the project goes by the name of Salland Green Gas. Salland Green Gas can rightly be regarded as an innovative project. After all: there are only a few Green Gas Hubs in the Netherlands. This means that for both the technologies to be used and the administrative organisation, the project must be set up from scratch.

The Salland Green Gas project is a concrete example of the efforts of the Province of Overijssel to combat climate change. The province has an active role in both the initiation and the execution of the project. This role-perception is in keeping with the role pattern for the government outlined in the “New energy for the climate” work programme. The work programme talks of an initiating role for government so that test beds emerge for the application of innovative energy-saving techniques (VROM 2007: 42). It is perfectly conceivable that such a role-perception is very much in keeping with policy initiatives to combat climate change. At the same time a fundamental question arises in the context of the earlier liberalisation wave of the energy sector. The liberalisation did after all have the consequence that the government ended up remote from the energy sector. The question arises in what way a public interest in the sector can be safeguarded in which intensive involvement of the government is important. A solution to this problem appears to be available. The national “New energy for the climate” work programme states in advance that there are opportunities for public-private partnership (PPP)^{IX}. Unfortunately, the Ministry of Housing, Spatial Planning & the Environment (VROM) omits any further elaboration of this thinking from the report, though it does appear in this paper. It involves an assessment of the opportunities that actually exist for PPP below and the way in which a logical and consistent appraisal can be made for a form of PPP. This happens by presenting an ex-ante analysis framework for legitimate forms of PPP. The focus is on legitimacy because it is generally accepted in public administration that public exercise of authority by the government must be

legitimate and therefore also the regulation for this exercise of authority (cf. Weber 1922, Luhmann 1969, Beetham 1991, Scharpf 1998)^x. PPP is proposed by the Ministry of Housing, Spatial Planning & the Environment (2007) as a solution for realising innovations effectively, but the legitimacy of PPP as control of innovation is not answered thereby and must therefore be examined on its merits. Below we first give an outline description of how legitimacy is approached in public administration.

Public administrative legitimacy

Legitimacy is one of the central concepts in public administration. In the literature this concept has therefore had considerable attention from various authors (see for instance: Weber 1922, Luhmann 1969, Beetham 1991, Scharpf 1998). For the presentation of an ex-ante analysis framework for legitimate forms of PPP, David Beetham's perspective on legitimacy is important. In public administration his body of thought can be construed as one of the most detailed perspectives on the legitimacy of public exercise of authority. His approach is described in outline below.

In the 1990s David Beetham developed a cross-disciplinary perspective on legitimacy for the ex-post evaluation of the legitimacy of public exercise of authority. In his judgment the analysis framework can be applied universally (1991: 21). To meet this ambition, David Beetham regards legitimacy as a 'multi-dimensional' concept with three dimensions (1991: 15-16): 1. legality; 2. shared values; 3. consent. Together they constitute the (cumulative) conditions for legitimacy, which can then also be tested empirically (Heldeweg & Sanders 2011). Table 1 shows a summary of this:

Table 1: The three dimensions of legitimacy (Beetham 1991, p. 20, Table 1.1)

Criteria of Legitimacy	Form of Non-legitimate Power
1. Conformity to rules (legal validity)	Illegitimacy (breach of rules)
2. Justifiability to rules in terms of shared beliefs	Legitimacy deficit (discrepancy between rules and supporting beliefs, absence of shared beliefs)
3. Legitimation through expressed consent	Delegitimation (withdrawal of consent)

Dimension 1., 'legality', requires legally valid exercise of authority, as the 'law stands' – including unwritten rules (Beetham, 1991: 64 et seq). Legal rules make (autonomous) social regulation possible, thanks in part to alignment of the government to the law – for which read, rule of law (Heldeweg & Sanders 2011).

Dimension 2., 'shared values', requires that the rules by which we must act are also intrinsically justified (Beetham, 1991: 69 et seq). They must be based on 'normative principles' that express shared value perceptions about the citizen-government relationship (standard setter and standard addressee respectively) and whose justification follows from their origin (what is the source?) or their content (why these rules?) (Heldeweg & Sanders 2011).

Dimension 3., 'consent', refers to voluntary consent of the subordinate(s) with the political exercise of power by the dominant actor (Beetham, 1991: 91 et seq), as by democratic mechanisms (Heldeweg & Sanders 2011).

The authors of this paper takes the position that David Beetham's analysis framework is not only applicable to the ex-post assessment of legitimacy of public exercise of authority; his three-way structure can also be used as a starting point for the development of an ex-ante analysis framework for legitimate forms of PPP in general and be applied to the promotion of innovation in particular. For this David Beetham's analysis framework is adjusted and improved in a number of respects, which leads to a phased plan consisting of five steps, that is: (i) characterising of the interest, (ii) choice of the form of regulation, (iii) determination of the risks of failure, (iv) denoting PPP type, and finally (v) determination of the legal form.

Step 1: characterising of the interest

Before the government concludes a PPP, it must first decide whether it has a role in the protection of an interest at all (see the distinction between types of interest made above in this paper). As we have said, in the report "The safeguarding of public interest" the WRR categorises three kinds of interest, that is: (i) individual, (ii) social and (iii) public interests (2000: 19). According to the WRR, in the case of social interests it is a matter of interests for which protection is desirable for society as a whole (2000: 20). The WRR says that the involvement of the government for the promotion of social interests is not necessary per se (2000). Many of these social interests are in fact protected without government involvement (2000: 20). But, according to the WRR, it is problematic to assume that the quality and the accessibility of given social interests for instance are adequately safeguarded without the involvement of the government (2000: 20). In those cases the government can concern itself with the protection of a social interest on the basis of the conviction that this interest will not otherwise be done full justice (WRR 2000: 20). In such situations there is a transformation from a social interest into a public interest. This transformation means that the government makes the interest the object of its policy (WRR 2000: 21). Which interests are public and in what way these interests are expressed in policy goals is the outcome of political argumentation and debate. Or, as the WRR puts it: in the case of public interests the what question is pre-eminently a political question (2000: 21). The how question (how the government must give shape to its final responsibility?) can be answered in many ways (WRR 2000: 21). According to the WRR, in the case of the how question the key question is always whether the government must fulfil its final responsibility on its own or by bringing in private parties (2000: 21). The latter happens for instance with PPP. In such a partnership relationship between the government and private parties it is however possible to regulate the public interest in different ways. An assessment can be made between these forms of regulation. Step 2 is about this choice. The basic principle here is that innovation in the energy sector, in particular where the promotion of sustainable energy generation is concerned, is a public interest.

Step 2: choice of the form of coordination

Where the government has taken the final responsibility for a particular social interest and gives its preference for realising this interest in a PPP, the question about the way in which this partnership can be coordinated becomes topical. In public administration it is customary to make a distinction between three forms of coordination, that is: (i) market, (ii) hierarchy and (iii) network (see Thompson 1991: 1)^{xi}. These variants are first described in outline below, before a link with PPP is made.

The three forms of coordination are regarded in the literature as arenas in which goods and services (so policy too) come about through transactions between those concerned (public and/or private actors). This implies that the government can make a targeted choice of one of these forms of regulation for the method of creating a good or a service. Where the

government formulates policy for the realisation of a public interest, it therefore has the choice of: (i) market, (ii) hierarchical or (iii) network coordination.

First of all there is the market. This type of coordination is not in itself a priori targeted. The government can however use market regulation for the realisation of a public interest, in particular to secure efficiency. Efficiency is not then the goal, but the outcome. The basic thinking behind such an outcome is that both ‘demanders’ and ‘providers’ of a good or service participate in transactions willingly. Together these economic actors form an arena, in which the transactions take place. The idea is that the actors make an assessment between all the conceivable alternatives on the basis of full information and in their choice pursue the optimisation of their own welfare function.

Hierarchical coordination differs from market coordination in the sense that a hierarchy is in itself targeted. In this case an attempt is made to realise a public interest by government control. The parties participating in this process are expected to act ‘in the spirit’ of the objective laid down or to submit to it according to given rules of behaviour. For the optimisation of this process it is for instance necessary to define tasks precisely, to grant few autonomous powers to contract partners and to structure responsibility relationships top-down. In contrast to market control, in the hierarchy efficiency is far more a by-product of the control, which itself is primarily directed at effective protection of public interests.

The third arena in which goods and services come about is the network. Just as in the case of the hierarchy a network is set up targeted to pursue policy. The network is to be perceived as a setting in which the participating autonomous actors try to reach agreement on a strategy to achieve a policy goal. It is not the price mechanism that controls the transactions in this case, as is the case with the market, nor unilaterally one particular authority, as in a hierarchical setting; it is the interaction between the participating parties that leads to agreement on the policy strategy. This interaction is necessary because the actors have an equal relationship. This equality arises through the specific knowledge or expertise that the parties contribute. Parties in a network are equal on the basis of mutual dependence.

As we have indicated, for the safeguarding of a public interest an assessment must be made between the three arenas. Guiding in this choice process are the value orientations underlying the forms of coordination. These value orientations differ from one type of coordination to another.

The basic thinking of market forces is that economic agents acting rationally on the basis of full information (the price of an economic good) make an assessment leading to an optimum outcome (efficiency). This outcome is however only possible where there is a perfect market (in other words, there can be no question of market failure). Perfect market forces exist where the market satisfies two basic principles, that is: (i) it must be ‘open’ (transparent) and (ii) there must be fair competition. In the practice of public administration these two principles are for instance expressed in the European tendering directives.

In hierarchical coordination it is not so much a matter of competition, but of exercise of public authority by the government (or by executives in companies, but this interpretation of hierarchical control is not under discussion here). For the exercise of public authority in the Dutch doctrine a number of leading legal political values are maintained, which have been clustered below in three dimensions, that is (Zijlstra, 2009: 6-8; Heldeweg & Sanders 2011): (i) ‘democracy’: voice of citizens over government power (with the primacy of general people's representation – representation over participation); subsidiarity and decentralisation; openness, (ii) ‘liberal rule of law’: the separation of state and society, the primacy of civil autonomy and alignment of the government to the law – in particular spreading government authority, legality, fundamental rights, legal protection (and embedding in the international

legal order), (iii) ‘servient government’: the government does not exist for itself but for social justice and should achieve this effectively and efficiently.

Networks are described in public administration as more or less stable patterns of relationships between mutually dependent actors formed around policy issues or policy programmes (Kickert et al, 1997, p. 6). In such an arena policy is the outcome of effective communication. For this communication in the first place the basic principle applies that there must be general acceptance. This means that all the interests in the network must be represented and that then the policy outcome is accepted by all the participants. The second basic principle is that there must be reciprocity. This means that the participants act without a direct consideration being provided.

Table 2 shows a summary of the underlying value orientations of the forms of coordination.

Table 2: Underlying value orientations of forms of coordination

Step 2: Choice of the form of coordination				
	Market	Hierarchy	Network	
Underlying value orientations	Transparency and fair competition	Democracy, liberal rule of law and servient government	Reciprocity and general acceptance	

Step 3: determination of the risks of failure

It is important to realise that any form of coordination in innovative policy projects involves the risk of a given type of failure. The step following the choice of an arena to bring about an innovative policy project is therefore the indication of these risks. A worthwhile distinction that is in line with the different forms of regulation is: (i) market failure, (ii) government failure and (iii) network failure. In the practice of public administration these categories of failure in innovative policy projects can have all kinds of forms of expression. Given this diversity preference has been given to putting a deepening in these forms of expression beyond the scope of the paper. Table 3 suffices with giving a number of examples of each type of failure.

Table 3: Forms of failure

Step 3: Determination of the risks of failure			
	Market	Hierarchy	Network
Forms of failure	Missing investments, negative external or distribution effects	Supply control and bureaucratic inefficiency	Inclusivity/exclusivity, hierarchy within the network

Step 4: denoting PPP type

It is important to indicate the failure factors in the previous step because they can be avoided by introducing subsets in the three arenas that consist of elements of the other forms of regulation. The consequence of combining elements of different forms of regulation is that hybrids emerge. PPP must be understood as an example of such a hybrid^{xii}. PPP is defined by Heldeweg & Sanders as a legally structured partnership between one or more authorities and one or more corporate entities governed by private law that focuses on the development and execution of a common strategy for the realisation of a policy project (2011)^{xiii}. The above implies that a PPP is possible in the three alternative forms of coordination. For this reason Heldeweg & Sanders distinguish the following types of PPP: ‘PPP in a market arena’ or

‘market PPP’, ‘PPP in a network arena’ or ‘network PPP’ and ‘PPP in a hierarchical arena’ or ‘authoritative PPP’. Table 4 gives a summary of the forms of PPP.

Table 4: Forms of PPP (Heldeweg & Sanders 2011, Table 1)

PPP type	Goal & Approach (way of working)
Market PPP	Goal: to put a policy project into <i>effect</i> Approach: as <i>exchange</i> , on the basis of <i>separated</i> powers & responsibilities <ul style="list-style-type: none"> - public party lays down – in particular assignment and decisions - private party puts into effect – in particular ‘working & services’
Network PPP	Goal: <i>joint determination</i> of goals and an associated strategy as regards a policy project Approach: focused on <i>coordination</i> of powers & responsibilities <ul style="list-style-type: none"> - public party lays down - private party may participate in the putting into effect
Authoritative PPP	Goal: <i>authoritative determination</i> (and arranging putting into effect) of a policy project Approach: on the basis of <i>joint</i> powers & responsibilities <ul style="list-style-type: none"> - joint determination of goals/strategy/decisions (with public authority) - putting into effect itself or by others

The goal of the market PPP is not this joint strategy, but putting a policy project into effect on the basis of (mutually beneficial) exchange against the background of separate public and private positions (Smit, 2010). This leads to PPP as bare configuration, as in the construction of durable property such as wind farms (Heldeweg & Sanders 2011). The government formulates the project and then the phases from building design and building construction through to maintenance and/or operation are put out to tender, for example in the form of a DBFM(O) contract (Van Ham & Koppenjan 2002).^{xiv}

In the ‘network PPP’ there is partnership in an association (let’s say, a ‘committee’) with the aim of formulating a joint strategy – such as a municipality consulting with retailers about the design of a town centre (Heldeweg & Sanders 2011). According to Heldeweg & Sanders, it does however remain the case that public and private parties have their own tasks, powers and responsibilities, so that implementation of the strategy by formal decisions to this effect remains a matter for the government (and it otherwise remains to be seen – possibly in terms of competition law –whether and if so what role the private parties concerned play in any execution) (2011).

Finally, Heldeweg & Sanders distinguish the ‘authoritative PPP’, which not only has partnership at strategy formulation level, but its determination, or the taking of (execution) decisions to this effect also counts among the powers of the partnership; this PPP goes hand in hand with citizen-binding decisions, in short: *public authority* (Heldeweg & Sanders 2011).

Step 5: determination of the legal form

Once it has been determined at ‘step 5’ which form of PPP is involved, a concrete form of organisation can then be laid down. Different arguments play a part in the assessment process for a given legal form, which also differ from one situation to another. The participants in a legal form may for example attach importance to limitation of liability or to tax transparency. In addition to participants, restrictions are also laid down by the authorities – as outcomes of multi-level governance, for example through EU rules. By identifying these arguments and frameworks it is possible to make the definitive choice for a legal form.

Table 5: Summary of legal forms^{xv}

Step 5: Determination of the legal form			
	Market	Hierarchy	Network
Legal forms	Only contract, joint companies ((partnership, general partnership, limited partnership, public company, private company, foundation and/or (cooperative) association)), property law arrangements (ownership, easements, qualitative obligations, perpetual clauses, ground lease, building and planting rights, apartment rights)	Administrative committees, provincial committees, joint regulation	Optional committees

Conclusion

On the basis of the developments in the field of sustainability in the energy sector it has been illustrated in this paper that what is regarded as public interest is the outcome of political argumentation and debate. This dynamic does not just have an impact on the interests that are regarded as public (the what question), but also on the way in which public interests are safeguarded (the how question). Different mechanisms are possible for the safeguarding of public interests.

In the field of renewable energy sources (as in the case of the Salland Green Gas project) the government is reliant on technological innovations by private parties in the sector. The government sees it as its responsibility actually to offer these private parties the space for technological innovations. This is possible by concluding PPP links with parties in the policy domain.

This paper shows that different types of PPP are possible for the safeguarding of public interests and that a variety of legal forms go with these types. This variety raises the question of how a legitimate form of PPP can be selected in a logical and consistent way. In this paper an ex-ante analysis framework has been presented for this. This analysis framework has been presented as the following phased plan:

1. characterising of the interest;
2. choice of the form of regulation;
3. determination of the risks of failure;
4. denoting PPP type;
5. determination of the legal form.

The above analysis framework is being applied in the Salland Green Gas project. Because this process is currently ongoing, it is not yet possible to report on the outcome of the ex-ante analysis framework.

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ⁱⁱ Thompson distinguishes three forms of regulation, that is: (i) market, (ii) hierarchy and (iii) network (see Thompson et al, 1991).

ⁱⁱⁱ The shares of these companies are sometimes in government hands and sometimes not (any more).

^{iv} The concept of public interest is studied in various scientific disciplines, which has led to different definitions of the term. Van Genugten categorises these different meanings in two types of approach, that is: (i) economic approach to public interests and (ii) public interests in the politico-administrative reality approach (2008, p. 5). Because of the administrative-legal approach of this paper and the casuistry, a definition of public interests from the politico-administrative approach has been chosen. The WRR approach falls into the politico-administrative approach (Van Genugten 2008, p. 5). Alternative definitions can also be found in the politico-administrative approach, which usually cover the same overtone. An example of this is the Socio-Economic Council (SER) which, in the design advice “Public interest requires customisation in market mechanism”, describes this type of interest as interests whose protection is desirable for society as a whole and that politics is concerned about for this reason (2010). In the opinion of the authors, this description is an excellent conceptual starting point in this paper in view of the authoritative nature of the WRR definition.

^v For the realisation of public interests the government then formulates policy. Because the term policy is used regularly in this paper, a conceptual definition is important. A topical and frequently quoted definition is given by Hoppe et al (2004). His definition is: *policy is a politically confirmed plan for the approach, preferably a solution, to a social problem* (Hoppe et al, 2004, p. 14).

^{vi} See the Independent Grid Management Act.

^{vii} The climate accord “Working together on a climate-proof and sustainable Netherlands”, which was signed by central government and the Association of Dutch Municipalities (VNG) on 12 November 2007, is an example of such an administrative accord. These climate accords also exist between the Association of Regional Water Authorities and central government and the provinces and central government.

^{viii} An example of a sustainability accord is the accord signed by the Cabinet and the business community (MKB-Nederland, VNO-NCW and LTO Nederland) on 1 November 2007.

^{ix} The European Commission is also seeking its salvation in PPP, witness some major initiatives, especially where innovation is important. An example of this is the Green Cars initiative.

^x Discussion of this basic principle falls outside the scope of this paper.

^{xi} The forms of coordination can be approached in two ways. First, as spontaneous coordination, in which no direction is given, but emerges in the context. For example, a group of people having intensive dealings with each other can have the characteristics of a network. Second, the forms of coordination can be approached as chosen coordination. This means that before the production of a good or a service an arena is chosen. For example, the government has the choice of leaving policy projects to the market, organising them hierarchically or letting them come about in a network context. In this paper the forms of coordination are approached as chosen forms of coordination.

^{xii} Committees for interactive policy-forming are another example of a hybrid form.

^{xiii} The Heldeweg & Sanders definition is in part based on the definition used by Bregman (2005).

^{xiv} Design, Build, Finance, Maintain (and Operate) (Van Ham & Koppenjan 2002) – with interaction (cf. the ‘competition-oriented dialogue’), but not as independent goal (as with network and authority PPP).

^{xv} This summary is partly based on Bregman (2005).