

1. Introduction

In December 2012 the EED, the Energy Efficiency Directive, was adopted. It was introduced with the aim of reducing energy consumption by 20% in 2020. This energy-efficiency strategy focuses on a wide variety of policy areas; this Annex discusses the long-term strategy required for the renovation of buildings, as described in Article 4 of the EED.

2. EED, Article 4

Renovation of buildings

Article 4 of the EED requires European Member States to establish a long-term strategy for the renovation of buildings.

Renovation of buildings

Member States shall establish a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private. This strategy shall encompass:

- (a) an overview of the national building stock based, as appropriate, on statistical sampling;*
- (b) identification of cost-effective approaches to renovations relevant to the building type and climatic zone;*
- (c) policies and measures to stimulate cost-effective deep renovations of buildings, including staged deep renovations;*
- (d) a forward-looking perspective to guide investment decisions of individuals, the construction industry and financial institutions;*
- (e) an evidence-based estimate of expected energy savings and wider benefits.*

A first version of the strategy shall be published by 30 April 2014 and updated every three years thereafter and submitted to the Commission as part of the National Energy Efficiency Action Plans.

The basis of the Dutch response to this mandatory long-term strategy is the Energy Agreement signed in 2013 by 40 parties, public and private, with firm ambitions, objectives, intentions and agreements for energy saving in many spheres in the Netherlands over the short, medium and long term. In addition to implementing the Energy Agreement, the Netherlands will be continuing to implement other standing policy on energy saving over the next few years.

At the end of 2016 the Cabinet presented the Energy Agenda. This agenda sets out the broad long-term lines until 2050. These shall be made more specific in the near future and after 2020 will continue and bolster the momentum started by the Energy Agreement.

Notes

Questions a) and b) are answered by Annexes 8.a. Energy saving: a combination of home and

occupant – Analysis of the Energy WoON 2012 module, and 8.b. Improving the reference picture of the non-residential sector (stock, energy use, saving potential, investment costs, labour).

Questions c), d) and e) are answered on the basis of the Energy Agreement and the Energy Agenda. The various relevant parts for the renovation strategy for the built environment are dealt with and discussed in sections 3 to 7. Annexes

8.d. Background Document to the Development of the Social and Economic Council of the Netherlands Energy Agreement (*Achtergronddocument bij Doorrekening SER Energieakkoord - Sector Gebouwde omgeving*).

8.e Assessment of the Energy Agreement Intensification Package and annexes 8.f 1-6 (National Energy Outlooks 2014-2016, Evaluation of the Energy Agreement 2016 and the Progress Report 2016) provide further information on calculating the implications of the Energy Agreement, its effects and the expected and achieve energy savings in the built environment.

3. The Energy Agreement and the Energy Agenda

3.1 The Energy Agreement

In September 2013 the Energy Agreement for Sustainable Growth was signed by over 40 parties in the Netherlands who are active in the field of energy efficiency and sustainable generation. In this agreement the parties establish the basis for a broad, robust and future-proof energy and climate policy.

The Energy Agreement makes a strong commitment to energy efficiency. This is extremely important because energy efficiency not only contributes towards security of supply and the reduction of CO₂ emissions, but also reduces the energy bills of citizens and companies and gives a strong boost to employment, particularly in the building sector.

These agreements are intended to produce a total collective saving of 100 PJ in 2020 and will also fulfil the European obligation to save an average of 1.5% of final energy consumption in the period 2014-2020.

Energy saving in the built environment

Energy saving in the built environment is an important part of the Energy Agreement, as there are opportunities to make significant energy savings in this area. The parties who have signed the agreement have reconfirmed the existing objectives:

- the objectives from European Energy Efficiency Directive (EED), the Energy Performance of Buildings Directive (amended) and the Ecodesign Directive;
- existing buildings: move 300 000 existing residential buildings and other buildings a year up two label stages;
- new buildings: nearly zero-energy from 2020 (and from 2018 for government buildings) in accordance with the EPBD Directive;
- rental: average label B in social rental sector and a minimum label C for 80% of private rental properties in 2020.

The first bullet point is particularly important: the Energy Agreement reconfirms the objectives from the EED. The second and fourth bullet points are particularly important for Article 4 of the EED; and where renovation no longer applies, new building ensures the provision of nearly zero-energy housing (third bullet point).

The Energy Agreement aims to reduce CO₂ emissions by 80-95% in 2050 and to achieve 16% renewable generation in 2023. Under the global climate agreements, the Netherlands has

undertaken to achieve at least a 40% CO₂ reduction in 2030. The Energy Agreement aims to achieve at least an average energy label A for buildings in 2030. Under the EPBD Directive, all new buildings must be nearly zero-energy by 2020.

3.2 The Energy Agenda

At the end of 2016 the Cabinet presented the Energy Agenda. This agenda sets out the broad long-term lines until 2050. Energy saving in the built environment is included here under 'Energy for heating spaces'.

Energy for heating spaces in the built environment

The most important pillars of the policy for CO₂-neutral low-temperature heating in 2050 for the Netherlands, as set out in the Energy Agenda, involve the far-reaching reduction of the demand for heating by means of energy saving and a dramatic decrease in the use of natural gas through encouraging and integration of sustainably generated electricity and sustainable heating. The Cabinet is preparing statutory mandatory measures, such as a minimum energy label for housing corporation accommodation and offices. It is being explored whether they can also be applied to other property sectors. The Cabinet is further continuing and expanding the stimulus for reducing consumption by means of information, subsidies (such as the Homeowner Energy-saving Incentive Scheme (*Stimuleringsregeling Energiebesparing Eigen Huis*)) and supporting innovative approaches. In the next few years statutory and administrative parameters will be created for the purpose of dramatically reducing the use of natural gas in the built environment, inter alia by means of regulating large-scale heating networks in a comparable manner to electricity and gas networks and by holding municipalities (partially) responsible for the strategic implementation.

4 Strategy and implementation

4.1 Strategy

The point of departure of the Energy Agreement is that building owners – i.e. housing associations, citizens, companies, institutions and public bodies – have an interest in and are responsible for energy-efficiency, but that they do require support in that respect. A coordinated effort on the part of the Central Government, municipalities, contractors, builders, installation companies, banks, building owners and landlords is required. A combination of information and awareness, facilitation and financial support was selected.

Over the longer term the strategy for achieving CO₂-neutral low-temperature heating in the Netherlands by 2050 is set out in the Energy Agenda. The large-scale return of the use of natural gas in the built environment is a decision with major consequences. The strategies shall be further worked out at a regional level, as the alternatives for space heating in the built environment can differ at a regional and local level.

Energy-saving will become a part of these regional strategies.

4.2 Implementation

A Guarantee Committee was created when the Energy Agreement was concluded in 2013, which is responsible for monitoring compliance with the agreements and provides details on the outcomes of the Energy Agreement. The Guarantee Committee ensures that the measures agreed to in the Energy Agreement are adopted, and that the agreement goes beyond intentions alone. The results

achieved by the Energy Agreement will be evaluated at set times; a decision can be made to adjust the measures to be taken if the result achieved is inadequate. All parties who have signed the Energy Agreement are represented on the Guarantee Committee, which is chaired by an independent chair (Dr E.H.Th.M. Nijpels).

In this scope the National Energy Outlooks (Nationale Energieverkenning (NEO)) were published in 2014, 2015 and 2016. The National Energy Outlook is a survey that is conducted annually and analyses Dutch energy management and sketches out plausible future developments under established and proposed policies. The measures of the Energy Agreement for Sustainable Growth are included in these assessments.

On the basis of the results contained in the 2015 National Energy Outlook, a package of intensifying measures was established in the spring of 2016, of which the label C obligation for offices is the most important for energy-saving in the built environment.

The impact of this package of intensifying measures in the built environment is estimated to amount to 10.0 PJ in 2020 (6.7-27.7 PJ bandwidth) (Assessment of the package of intensifying measures for the Energy Agreement, ECN 2016). Not all of these measures in the intensification package have already been included in the 2016 National Energy Outlook because they have not yet been worked out to a sufficient degree. On the basis of the established policy and proposed (sufficiently concrete) policy, the final energy saving in the built environment is estimated to be 27 PJ per year (13-43 PJ bandwidth).

Further measures were agreed to in the autumn of 2016, in particular the obligation to phase out rental housing with a label lower than label C. This measure will result in an additional energy saving of approximately 5 PJ in comparison to the 2016 NEO. It is being endeavoured, together with the energy suppliers, installers and network operators, to create a task-setting agreement between the energy suppliers, installers, network operators and the government. This agreement shall give rise to an energy saving market and result in an additional final energy saving of 10 PJ in 2020.

Effect of individual measures

An overview can be found in table II.1 of the expected energy saving resulting from measures in the Energy Agreement. This only concerns measures that were sufficiently worked out in May 2016, not those measures that were agreed to as a result of the NEO 2016.

Table II.1 An overview of the expected energy saving resulting from measures in the Energy Agreement.

| Sector, Instruments | 2016 | | 2020 | |
|---------------------------|------------|------------------------|------------|------------------------|
| | Determined | Determined and adopted | Determined | Determined and adopted |
| Built environment, Total | 2 [1-4] | 4 [2-8] | 12 [6-20] | 27 [13-43] |
| Households, general total | 1 [0-2] | 1 [0-2] | 5 [2-10] | 5 [2-10] |

| Sector, Instruments | 2016 | | 2020 | |
|---|---------------|------------------------|---------------|------------------------|
| | Determined | Determined and adopted | Determined | Determined and adopted |
| Smart meters | 0.5 [0.2-1.1] | 0.5 [0.2-1.1] | 2.4 [1.2-5.6] | 2.4 [1.2-5.6] |
| Tightening up Ecodesign | 0 [0-0] | 0 [0-0] | 0 [0-0] | 0.7 [0-0.7] |
| ISDE HH (additional) Tax shift to bracket | 0.5 [0.1-0.8] | 0.5 [0.1-0.8] | 2.3 [0.7-3.9] | 2.3 [0.7-3.9] |
| Owner-occupied housing sector total | 1 [0-1] | 1 [0-1] | 3 [1-4] | 3 [1-5] |
| Owner-occupied housing sector approach | 0.6 [0.2-0.8] | 0.6 [0.2-0.8] | 2.9 [1.1-4.2] | 2.9 [1.1-4.2] |
| Financing arrangements | 0 [0-0] | 0.1 [0.1-0.1] | 0 [0-0] | 0.4 [0.3-0.6] |
| Rental sector total | 0 [0-0] | 0 [0-1] | 1 [1-2] | 2 [1-6] |
| STEP scheme | 0.1 [0.1-0.3] | 0.1 [0.1-0.3] | 0.7 [0.5-1.3] | 0.7 [0.5-1.3] |
| Stroomversnelling | 0.1 [0.1-0.1] | 0.3 [0.1-0.4] | 0.3 [0.3-0.3] | 1.3 [0.3-2.1] |
| Local agreements | 0 [0-0] | 0 [0-6] | 0 [0-0] | 0 [0-3] |
| Services total | 1 [0-1] | 2 [1-3] | 3 [2-4] | 16 [9-22] |
| ISDE HDO | 0.1 [0.1-0.1] | 0.1 [0.1-0.1] | 0.4 [0.3-0.5] | 0.4 [0.3-0.5] |
| Sports facilities subsidy | 0 [0-0] | 0.1 [0-0.1] | 0.3 [0.2-0.4] | 0.3 [0.2-0.4] |
| Enforcement of Environmental Management Act | 0.5 [0.3-0.7] | 1.8 [1.1-2.5] | 2.4 [1.5-3.4] | 12.5 [7.5-17.5] |

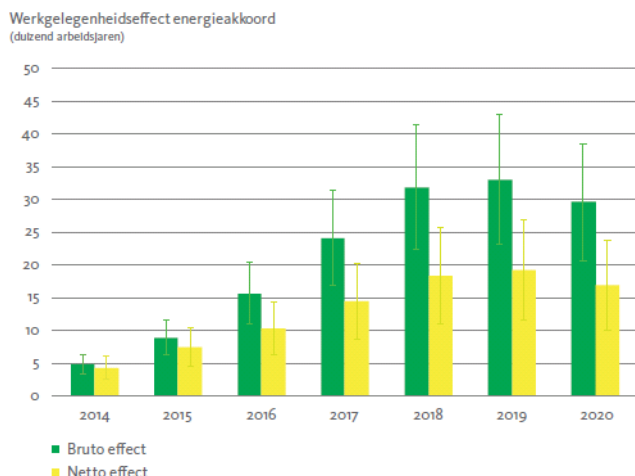
| Sector, Instruments | 2016 | | 2020 | |
|---------------------------|------------|------------------------|------------|------------------------|
| | Determined | Determined and adopted | Determined | Determined and adopted |
| Tightening up Ecodesign | 0 [0-0] | 0 [0-0] | 0 [0-0] | 0 [0-1] |
| Mandatory label C offices | 0 [0-0] | 0.5 [0.3-0.6] | 0 [0-0] | 2.7 [1.4-3.2] |

Source: Nationale Energy Outlook 2016

Employment

The objective of the Energy Agreement is to create 15 thousand additional (net) fulltime jobs and 90 thousand man-years between 2014 and 2020. It is evident from the figures for employment that the energy transition is picking up. Fulfilling the 15 000 fulltime job-target is within reach, in particular through the growth of employment in renewable energy and energy efficiency. Figure II.1 shows the gross and net employment effect of the Energy Agreement. Cumulative net employment will now reach the 90 000 man-hours target, according to the model.

Figure II.1 Gross and net employment effect of the Energy Agreement



Source: Nationale Energy Outlook 2016

| | |
|---|---|
| Werkgelegenheidseffect energieakkoord (duizend arbeidsjaren) | Employment effect of the Energy Agreement (thousand man-hours) |
| Bruto effect | Gross effect |
| Netto effect | Net effect |

5. Owner-occupied housing

In the owner-occupied housing sector the following actions have been instituted and results achieved (Energy Agreement for Sustainable Growth: 2016 progress report; Parliamentary letter on the Energy Agreement 2016 progress report):

- In February 2016 Energie Nederland launched its campaign ***Sta op uit je stoel*** ('Get out of your chair'), which aims to encourage citizens and companies to save energy. For a two-week period commercials were aired on television and radio. Energy companies highlight their energy saving products on a campaign website.
- The Ministry of the Interior and Kingdom Relations launched a three-year **national activation campaign** called *Energie besparen doe je nu* ('Save energy now'), which aims to encourage private homeowners to save energy in their own homes by raising the sense of urgency and tackling frequently asked questions and objections. The campaign could cover all homeowners with a label C or lower residence. Aside from radio and television advertisements there is also a campaign website where homeowners can pose questions, examine the measures and options for subsidies, and where they are referred on to municipal energy points of contact and product and service

providers. Sector organisations for energy suppliers and the Ministry of the Interior and Kingdom Relations liaised on how the campaign can be used as part of the many **regional information initiatives**. These regional initiatives develop their own informational activities with the look and feel of the national campaign. The municipalities use **energy points of contact** to inform owner-occupiers in their regions of the benefits of energy saving, the range of products and services available in the region and the option for financial support. These energy points of contact are active in nearly all municipalities. Most municipalities started communicating with inhabitants and companies in this respect in October, which was linked to the national activation campaign.

- Following up on the recommendation of the Regiegroep Energiebesparing Koop (the steering group for energy saving in purchased homes), the **Stuurgroep Energiebesparing Koopsector** (the steering group for energy saving in the owner-occupied housing sector) guarantees cooperation between the VNG, the Ministry of the Interior and Kingdom Relations, Bouwend Nederland, Uneto-VNI, OnderhoudNL and the nature and environmental federations for encouraging energy saving in the regions. The steering group acts as the commissioning party in the development of various approaches and instruments.
- In the summer of 2016 the municipalities were asked to submit, together with the private sector, proposals for **Innovative Approaches** (*Innovatieve Aanpakken*). This covered actual projects that accelerate the sustainability of the owner-occupied housing sector at a local and regional level by means of developing Product-Market combinations that occupants utilise when making their homes more sustainable as they become zero-energy. The Innovative Approaches build on the energy points of contact and the alliances of suppliers.
- The Vereniging van Nederlandse Gemeenten (association of Netherlands municipalities (VNG)) has taken the initiative to create **maps that show the potential** (*potentiekaarten*) for energy saving and renewable energy options on streets and in neighbourhoods in the Netherlands. These electronic maps are intended for construction companies and installers and contribute to the understanding of energy-related policy issues among municipalities. In the summer of 2016 Statistics Netherlands started creating these maps containing information at a neighbourhood level, and they will be available in electronic form by the end of 2016.

- Bouwend Nederland (the sector organisation for Dutch construction and infrastructure companies), Uneto-VNI (the employers' organisation for the installation industry) and OnderhoudNL ((the employers' organisation for real estate maintenance) have jointly set out the outlines of the **Duurzame Aanbieder** ('Sustainable Provider') profile. It contains specific conditions for contractors who aim to offer owner-occupiers more tailored products and services for making their homes sustainable. Contractors (or consortiums of contractors) that qualify as *Duurzame Aanbieder* (Sustainable Contractor) are distinguished from non-qualifying contractors in that respect. The *Duurzame Aanbieder* profile will be available as of the end of 2016.
- The guarantee bodies Stichting Bouwgarant (a quality mark institution), Stichting Waarborgfonds Koopwoningen (owner-occupied housing guarantee fund (SWK)) and the house-builders' certification institute Woningborg Advies BV have developed an **energy performance guarantee** that affiliated contractors are able to use. Use of the energy performance guarantee is a precondition for participation in local/regional Innovative Approaches and for qualifying to use the Sustainable Contractor profile. The terms and conditions of each provider of an energy performance guarantee are bound to the application of this guarantee product. In general, a few individual measures or small measures with a limited effect fall outside of that. For owner-occupiers who choose such, and also for the purposes of additional security, Uneto-VNI, OnderhoudNL and Bouwend Nederland are developing the guarantee for energy label stages over the next few months.
- The **Nationaal EnergiebespaarFonds** (National Revolving Fund for Energy Saving) further lowered the interest in energy saving loans in the first half of 2016, thanks to a government grant of €10 million. Inhabitants of the province of Overijssel can now borrow at lower rates, thanks to an agreement between that province and the NEF. The fund has now issued approximately €50 million in energy-saving loans to owner-occupiers and owners' associations.
- On 1 September 2016 an **Energy-saving at Home subsidy scheme** (*Energiebesparing eigen huis*) was published, providing a budget of € 60 million for homeowners who implement at least two major insulation measures. For an integral and extremely low-energy package (the insulation package that is associated with a zero-energy home) a bonus of €4 000 over and above the subsidy is available. A subsidy is also available

for energy recommendations and for creating a green long-term maintenance programme for owners' associations.

- It is being endeavoured to create a **task-setting agreement** between the energy suppliers, installers, network operators and the government. This agreement shall give rise to an energy saving market and result in an additional final energy saving of 10 PJ in 2020. It has been agreed that the agreement will be worked out and signed by 1 May 2017. Should this not be achieved, then an alternative measure shall be considered. A component of the agreement is that if the parties are not on course for achieving the objectives of the agreement by the end of 2018, then additional mandatory measures can be adopted for the market parties.

6. Rented housing

In the rented housing sector the following actions have been instituted and results achieved (Energy Agreement for Sustainable Growth: 2016 progress report; Parliamentary letter on the Energy Agreement 2016 progress report):

- The **Energy performance surcharge bill** was adopted on 17 May 2016 and took effect on 1 September 2016. Landlords who renovate their properties so that they are nearly zero-energy or zero-energy can charge an energy performance surcharge to their tenants so as to earn back major investments in the rental property. The landlord and the tenant must reach an agreement on the sum of the fee.
- The Energy Performance in the Rented Housing Sector Incentive Scheme (**Stimuleringsregeling Energieprestatie huursector STEP**) was improved on 1 July 2016, and it is now expected to be used at a greater level. Among these measures was to extend the duration of the scheme until the end of 2018, to raise the subsidies for each improved step and to make higher subsidies available for very energy-efficient renovations.
- The VNG, Woonbond (the Union of Tenants) and Aedes (the federation of social housing institutions in the Netherlands) are expediting ambitious **performance agreements** in respect of sustainability by municipalities, corporations and tenants' associations. After affordability, energy-related home improvements are the most significant matter that was the subject of performance agreements between August 2014 and December 2015. Since the start of 2016 the local performance agreements are also reported annually in the Housing Council Statement (Staat van de Volkshuisvesting).
- It is estimated that **750 zero-energy renovations** were

performed in the rented housing sector, of which 700 were launched by Stroomversnelling.

- At the initiative of VNO-NCW (a Dutch employers' federation), the Netherlands Investment Institution (Nederlandse Investeringsinstelling (NLII)) analysed the business case for **zero-energy renovations**. A lack of financial resources does not constitute a considerable obstacle to a large-scale rollout in the rented housing sector. Important issues include the lack of certainty among housing associations on the duration of the energy performance surcharge and the netting scheme, the organisational complexity of such a renovation and the fact that costs are still relatively high.
- The Ministry of the Interior and Kingdom Relations shall examine the form and possible consequences of **phasing out rental accommodation with an energy label worse than label C**.

7. The property sector

In the property sector the following actions have been instituted and results achieved (Energy Agreement for Sustainable Growth: 2016 progress report):

- The Ministry of the Interior and Kingdom Relations has studied the design and possible consequences of mandatory energy-saving for offices. Over half of the office space (in excess of 80 million m²) presently has an energy label below that of label C. If the offices were required to attain label C by 2023, this would result in an additional saving of 8.6 PJ in that year. The average payback period is between 3 and 6.5 years. The majority of offices could attain a label C without being subjected to expensive construction modifications. Publication of this measure is scheduled for 1 January 2018 at the latest, with it taking effect and being enforced as of 1 January 2023.
- The Ministry of Infrastructure and the Environment and the VNG have given substance to the performance agreements identified in the Energy Agreement that concern the enforcement of the energy saving obligation in the Environmental Management Act by creating 22 regional energy saving agreements that are now in effect. Guaranteeing the monitoring of compliance with the Activities Decree constitutes a part of these approaches.
- The Green Deal for sustainable schools is in effect. Seven ambassadors have presented their experiences of energy saving to municipalities and school boards. A helpdesk and a website are both up and running and the subsidy scheme to which school boards can apply for assistance in the consulting expenses was

opened on 1 October 2016. Educational material dealing with the theme of energy has been disseminated. Three school boards have announced they wish to be part of zero-energy renovations for a school building.

- The Energy Saving and Sustainable Energy for Sports Facilities (Energiebesparing en Duurzame Energie Sportaccommodaties) subsidy scheme has been launched for a five-year period, with an annual budget of six million euros made available for it. In 2016 the subsidy scheme was exhausted within a few weeks. Together with the Association of Sports and Municipalities (Vereniging Sport en Gemeenten), NOC*NSF (Nederlands Olympisch Comité * Nederlandse Sport Federatie – the Dutch Olympic committee and sports federation) and the Sport guarantee fund, 18 regional meetings were hosted where information was provided on opportunities, existing subsidy schemes and forms of financing.
- The Central Government Real Estate Agency (Rijksvastgoedbedrijf) is starting three zero-energy pilot projects and is exploring energy saving measures in central government offices and other state buildings.

8. Annexes; literature

Parts a) to e) refer to those parts of Article 4 of the EED.

- a. *Energiebesparing: Een samenspel van woning en bewoner – Analyse van de module Energie WoON 2012*. Casper Tichelaar (ECN), Kees Leidelmeijer (RIGO), August 2013, ECN-E-13-037.
- b. Reference image improvements for the non-residential sector:
 - inventory data
 - energy usage
 - potential for savings
 - investment costs
 - labour inputJ.M. Sipma (ECN), December 2013, ECN-E-13-069.
- c. *Het Energieakkoord: Wat gaat het betekenen? Inschatting van de gemaakte afspraken* of http://www.pbl.nl/sites/default/files/cms/publicaties/pbl-2013-het-energieakkoord-wat-gaat-het-betekenen-1087_0.pdf
- d. *Achtergronddocument bij doorrekening SER Energieakkoord – sector Gebouwde omgeving*. C. Tigchelaar, ECN-E-13-045.
- e. *Beoordeling Intensiveringspakket Energieakkoord*, A.W.N. van Dril, M. Menkveld (ECN), May 2016 ECN-N-16-008

f. Energy Agreement for Sustainable Growth

1. Progress report 2016 (Energy Agreement Guarantee Committee)
2. National Energy Outlook 2016 (Energy Agreement Guarantee Committee)
3. Intensification of the Energy Agreement, May 2016 (Energy Agreement Guarantee Committee)
4. Evaluation, 2016 (KWINK Groep)
5. National Energy Outlook 2015 (Energy Agreement Guarantee Committee)
6. National Energy Outlook 2014 (Energy Agreement Guarantee Committee)