

ECN publications 2001

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1. PREFACE

ECN's research results are published in a number of report series, each series serving a different public, from contractors to the international scientific world. This report presents an overview of ECN publications published in 2001:

ECN publishes the following report series:

- ECN-C- publications: Contract reports containing the results of contract research;
- ECN-I- publications: Internal reports containing results for fellow colleagues, principally within ECN but also for those employed elsewhere; although reports in this series may not be in their definite form, they are not confidential and may be referred to;
- ECN-P- publications: Reports are written primarily for the non-specialist reader and cover subjects which are expected to be of general interest;
- ECN-R- publications: Research reports on the ECN research results available to the international technical and scientific world;
- ECN-RX- publications: Used for publishing preprints or reprints of journal articles that will be or have been published in a journal, or in conference or symposium proceedings;
- ECN-B- publications: Brochures.
- Other: for results and information that can't be classified in the other series;

The following ECN departments contribute to the list of publications for 2001:

- ECN Corporate: 5
- ECN Policy Studies: 48
- ECN Biomass: 17
- ECN Energy Efficiency in Industry: 12
- ECN Clean Fossil Fuels: 32
- ECN Technological Services & Consultancy: 5
- ECN Wind Energy: 46
- ECN Solar Energy: 41
- ECN Renewable Energy in the Built Environment: 33
- Total: **224 reports**

The list of ECN publications can also be browsed at the World Wide Web at URL address:

<http://www.ecn.nl/library/reports/>

The electronic version contains additional bibliographical information, *including abstracts and links to PDF files* of the publications (if available).

2. ECN PUBLICATIONS BY DEPARTMENT

(sorted out by title)

2.1 ECN Corporate

Annual Report 2000

Heijn, J.A. (BetaText, Bergen (Netherlands)) (ed.)

ECN-P--01-002

Petten : ECN, July 2001. – 44 p.

Keywords: Annual report; ECN

Energie innovaties : strategische voornemens 2001-2004

Willems, H.

ECN-B--01-010

Petten : ECN, October 2001. – 12 p.

Keywords: Energie innovatie

Energy innovations for the 21st century

Willems, H.

ECN-B--01-011

Petten : ECN, May 2001. – p.

Keywords:

Jaarverslag 2000 : Veiligheid, Gezondheid, Welzijn en Milieu (VGWM)

Schrover, A.J.M.

ECN-P--01-008

Petten : ECN, September 2001. – 28 p.

Keywords: Jaarverslag; Veiligheid, Gezondheid, Welzijn en Milieu (VGWM)

Jaarverslag 2000

Blackstone, R. (ECN, Petten (Netherlands));

Heijn, J.A. (BetaText, Bergen (Netherlands)) (ed.)

ECN-P--01-001

Petten : ECN, May 2001. – 44 p.

Keywords: Annual report

2.2 ECN Policy Studies

Accelerating the market penetration of renewable energy technologies in South Africa

Martens, J.W.; Lange, T.J. de; Cloin, J. (ECN, Petten (Netherlands));
Szewczuk, S. (CSIR, Pretoria (South Africa); Morris, R. (RMA, Glasgow (Scotland)); Zak, J.
(UCCEE-RISØ, Roskilde (Denmark))

ECN-C--01-052

Petten : ECN, October 2001. – 113 p.

Keywords: Renewable energy; South Africa; Market penetration

Baseline study and monitoring plan : gasfired co-generation at the Bratislava 1 heating plant. AIJ project PSO99/SK/2/1

Raad, A. de; Wees, M.T. van

ECN-C--01-005

Petten : ECN, April 2001. – 52 p.

Keywords: Monitoring; Cogeneration; Dual-purpose power plants; Slovakia; Greenhouse gases; Emission; Program management; Efficiency; Retrofitting; Decommissioning; Heat; Electric power; Air pollution abatement; Power demand; Energy demand; Data compilation; Data processing

Co-production of fuels as an option for Demkolec? : a preliminary review of opportunities for the co-production of liquid or gaseous energy carriers

Lange, T.J. de; Beeldman, M.; Kiel, J.H.A.; Uil, H. den; Veenkamp, J.M.

ECN-C--01-004

Petten : ECN, March 2001. – 69 p.

Keywords: Energy carriers; Coal gasification

Cost and potential of offshore wind energy on the Dutch part of the North Sea

Kooijman, H.J.T.; Noord, M. de; Volkers, C.H.; Machielse, L.A.H.; Eecen, P.J.; Pierik, J.T.G.;
Herman, S.A.; (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

ECN-RX--01-063

Petten : ECN, September 2001. – 4 p.

Keywords: Resources; Cost analyses; Cost of energy; Off-shore

EPA woningen : nadere invulling van de EPA doelstelling voor woningen

Jeeninga, H.; Beeldman, M.; Boonekamp, P.G.M.

ECN-C--01-001

Petten : ECN, January 2001. – 51 p.

Keywords: Netherlands; Energy efficiency standards; Energy audits; Houses; Carbon dioxide; Emission; Environmental policy; Energy conservation

Effecten op energiebesparing en emissies van beleidsrichtingen en instrumenten binnen het EBIT-programma

Bos, A.J.M.; Bosch, A. van den; Groot, A.T.J. (ECN, Petten (Netherlands));

Visser, J.A.; Vrenken, H.F.M. (NEA, Rijswijk (Netherlands))

ECN-C--01-105

Petten : ECN, December 2001. – 90 p.

Keywords: Energiebesparing; Energiebeleid

Effecten van de versnelde liberalisering : consequenties van de versnelde liberalisering voor de concurrentiepositie van Nederlandse energiebedrijven

Kaal, M.B.T.

ECN-C--01-034

Petten : ECN, August 2001. – 70 p.

Keywords: Liberalisering; Energiebedrijven

Energie Markt Trends 2001

Scheepers, M.J.J. ; Kaal, M.B.T.; Groenendaal, B.J.; Rijkers, F.A.M.; Boots, M.G.; Sambeek, E.J.W. van; Noord, M. de; Lange, T.J. de; Wals, A.F.

ECN-P--01-009

Petten : ECN, October 2001. – 100 p.

Keywords: Energiebeleid; Marktregulering; Marktstructuur; Strategie; Technologiekeuze; Energieprijzen; Forecasting; Netherlands; Energy supplies; Resource potential; Emission; Greenhouse gases; Sectoral analysis; Socio-economic factors; Population dynamics; Economic development; International relations; Planning; Technology assessment; Energy consumption

Energie Verslag Nederland 2000

Bruijn, A.

ECN-P--01-003

Petten : ECN, May 2001. – 128 p.

Keywords: Public utilities; Energy conservation; Reviews; Technology assessment; Environmental policy; Netherlands; Research programs; Market; Statistical data; Nitrogen oxides; Power generation; Energy Policy; Financial incentives; Political aspects; Emission; Energy demand; Sectoral analysis; Climatic change; Supply and demand; Technology utilization; Carbon dioxide; Sulfur dioxide; Competition; Petroleum industry; Prices; Legal aspects; Biomass; Petroleum refineries; Energy expenses; Natural gas industry; International agreements; Fuel cells; Exploration; Resource exploitation

Energieverbruik van energiezuinige woningen : effecten van gedrag en besparingsmaatregelen op de spreiding in en de hoogte van het reële energieverbruik

Jeeninga, H.; Uytterlinde, M.A. (ECN, Petten (Netherlands));

Uitzinger, J. (IVAM, Amsterdam (Netherlands))

ECN-C--01-072

Petten : ECN, October 2001. – 106 p.

Keywords: Energieverbruik; Energy consumption

Energy and environmental policy analysis : Shanghai Case Study

Jansen, J.C.; Gielen, D.J.; Smekens, K.E.L. (ECN, Petten (Netherlands));

Chen C. (Shanghai Academy of Environmental Sciences, Shanghai (China))

ECN-C--01-101

Petten : ECN, September 2001. – 75 p.

Keywords: Energy policy; China

Energy policy framework developments in industrialised countries : some observations on the relevancy for China

Jansen, J.C.; Boots, M.G.; Heuij, H.J.F.P. van den; Linden, N.H. van der; Sambeek, E.J.W. van; Wals, A.F.

ECN-C--01-026

Petten : ECN, March 2001. – 48 p.

Keywords: Energy policy; Industrialised countries; China; Liberalisation; Coal subsector; Gas subsector; Renewable energy sources; Energy policy; Energy; Institutional factors; Electric power; Natural gas; Petroleum; European Union; Deregulation; Pricing regulations; Contract management; Implementation; Market

Energy/Environmental modeling with the MARKAL family models

Seebregts, A.J.; Smekens, K.E.L. (ECN, Petten (Netherlands));

Goldstein, G.A. (International Resources Group Ltd, Washington (United States))

ECN-RX--01-039

Petten : ECN, December 2001. – 8 p.

Keywords: MARKAL

Evaluatie van waterstof-gebaseerde concepten en systemen : rapport fase 1

Reijers, H.T.J.; Groot, A. de; Lako, P.

ECN-C--01-019

Petten : ECN, April 2001. – 142 p.

Keywords: Concept; Systeem; Waterstoftechnologie; Keten; NO_x reductie; CO₂ reductie; Duurzame energie; Infrastructuur; Actor; Waterstofproductie; Waterstofopslag; Waterstoftransport; Waterstofgebruik; Hydrogen technology; Chain; NO_x reduction; CO₂ reduction; Renewable energy; Infra structure; Hydrogen production; Hydrogen storage; Hydrogen transport; Hydrogen use

Gemeentelijk energie- en klimaatbeleid in een geliberaliseerde energiemarkt

Burger, H.

ECN-C--01-035

Petten : ECN, May 2001. – 25 p.

Keywords: Local government; Energy policy; Environmental policy; Deregulation; Market; Netherlands

Guidelines for validation, monitoring and verification of solar home systems under the Clean Development Mechanism

Martens, J.W. (ECN, Petten (Netherlands));

Kaufman, S. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

ECN-C--01-120

Petten : ECN, December 2001. – 16 p.

Keywords: CDM; Solar Home Systems; Baseline, UNFCCC, SHS, Guidelines

Het Nederlandse fijn stof beleid en de effecten van verkeersmaatregelen : de omgang van overheden met fijn stof problematiek, de bijdrage van verkeer en het beleid dat overheden in deze voeren

Groot, A.T.J.

ECN-C--01-023

Petten : ECN, January 2001. – 34 p.

Keywords: Road transport; Environmental policy; Local government; Emission; Dusts; Particulates; Particle size; Pollution sources; Air quality; Pollution regulations; Netherlands; Public opinion

Het speelveld van lokaal klimaatbeleid

Menkveld, M.; Burger, H. (ECN, Petten (Netherlands));

Coenen, F.H.J.M. (CSTM, Enschede (Netherlands))

ECN-C--01-045

Petten : ECN, October 2001. – 65 p.

Keywords: Klimaatbeleid

Institutional framework of the Chinese power sector : background and overview paper on the status quo and reforms of the Chinese power sector

Sambeek, E.J.W. van

ECN-C--01-071

Petten : ECN, October 2001. – 35 p.

Keywords: China; Power sector; Electricity market

Life-cycle analysis and optimisation of solar home systems : interim report over 2000 of ENGINE project 74556

Nieuwenhout, F.D.J.; Martens, J.W.; Lasschuit, P.E.; Lafleur, M.C.C.; Cloin, J.

ECN-C--01-057

Petten : ECN, August 2001. – 78 p.

Keywords: Solar homes system; Rural electrification; Households

Lokaal klimaatbeleid in de praktijk : benutting van het speelveld, de invloed van trends en integratie van klimaatzorg in gemeentelijk beleid

Menkveld, M.; Burger, H.; Kaal, M.B.T. (ECN, Petten (Netherlands));

Coenen, F.H.J.M. (CSTM, Enschede (Netherlands))

ECN-C--01-083

Petten : ECN, October 2001. – 96 p.

Keywords: Klimaatbeleid; Climate policy

Lokale overheden en klimaatbeleid

Menkveld, M.; Burger, H.; Heinink, H.; Kaal, M.B.T. (ECN, Petten (Netherlands));

Coenen, F.H.J.M.; Van der Veer, K.A. (CSTM, Enschede (Netherlands))

ECN-C--01-084

Petten : ECN, November 2001. – 88 p.

Keywords: Climate policy; Greenhouse gases; Emissions; Utility buildings; Households; Traffic; Waste; Energy sector; Glasshouse horticulture businesses

Long-term scenarios and the role of fusion power : executive summary of SEO studies

Lako, P. ; Ybema, J.R.; Seebregts, A.J. (ECN, Petten (Netherlands));
Gilli, P.V.; Kurz, R. (Arge Wärmetechnik, Graz (Austria)); Kolb, G. (FS Jülich STE, Jülich (Germany)); Monthorst, P.E.; Lemming, J. (RISØ, Roskilde (Denmark)); Villeneuve, B. (CEA-IDEI Toulouse (France))

ECN-C--01-053

Petten : ECN, December 2001. – 22 p.

Keywords: Fusion Power; Coal-fired power; SERF

Marges voor verduurzaming van de Nederlandse energievoorziening binnen de Europese beleidsruimte : een symposium over klimaatbeleid, duurzame energie en voorzieningszekerheid, gehouden op 23 november 2001

Scheepers, M.J.J.

ECN-RX--01-071

Petten : ECN, November 2001. – 110 p.

Keywords: Symposium; Greenhouse gas; Emission trading; Sustainable energy; Energy supply; Energy policy

Marginale CO2-reductiekosten per sector voor de analyse van nationale emissiehandel : analyse voor de commissie Vogtländer

Ybema, J.R.; Beeldman, M.; Dril, A.W.N. van (ECN, Petten (Netherlands));

Oude Lohuis, J.; Annema, J.A.; Engelen, R.F.M. (RIVM, Bilthoven (Netherlands))

ECN-C--01-074

Petten : ECN, November 2001. – 65 p.

Keywords: CO2 reduction; Emission trade; Simulation models; Energy consumption; Netherlands

Monitoring energy efficiency indicators in The Netherlands in 2000 : Dutch contribution to the project ùCross country comparison on energy efficiency - Phase 6ò

Uyterlinde, M.A.; Arkel, W.G. van; Burger, H.; Dril, A.W.N. van; Jeeninga, H.; Kroon, P.

ECN-C--01-018

Petten : ECN, April 2001. – 73 p.

Keywords: Energy efficiency; Netherlands; Comparative evaluations; Reviews; Data analysis; Environmental policy; Sectoral analysis; Service sector; Households; Energy demand; Energy consumption; Energy expenses; Economic development; Energy conservation; Industry; Transportation sector; Residential sector; Electricity; Data compilation

Ontwikkeling van het huishoudelijk energieverbruik in een geliberaliseerde energiemarkt : effecten op aankoop- en gebruiksgedrag

Jeeninga, H.; Boots, M.G.

ECN-C--01-002

Petten : ECN, January 2001. – 37 p.

Keywords: Households; Energy consumption; Netherlands; Sales; Prices; Economic elasticity; Energy demand; Appliances

POWERS : simulatie van prijsvorming en investeringsbeslissingen in een geliberaliseerde Nederlandse elektriciteitsmarkt

Rijkers, F.A.M. (ECN, Petten (Netherlands));

Janszen, F.H.A.; Kaag, M. (Erasmus Universiteit, Rotterdam (Netherlands)); Battjes, J.J.

ECN-C--01-033

Petten : ECN, February 2001. – 35 p.

Keywords: Prices; Investment; Decision making; Netherlands; P codes; Computerized simulation; Market; Trade; Electricity; Deregulation; Competition; Capacity

PV Solar Home Systems in the CDM : streamlines procedures for solar home systems in the Clean Development Mechanism

Martens, J.W.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));

Kaufman, S. (Kaufman, Arlington MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

ECN-B--01-020

Petten : ECN, December 2001. – 4 p.

Keywords: PV solar home systems; Clean Development Mechanism (CDM)

Particulate matter in urban air: health risks, instrumentation, measurements and political awareness

Weijers, E.P.; Even, A.; Kos, G.P.A.; Groot, A.T.J.; Erisman, J.W.; Brink, H.M. ten

ECN-R--01-002

Petten : ECN, July 2001. – 69 p.

Keywords: Particulate matter; Urban air quality; Vehicle emissions; Health effects; Particle mass; Chemical composition; Sampling; Analysis; SJAC; CPC; LAS-X

Protocol Monitoring Energiebesparing: CBS, CPB, ECN, NOVEM en RIVM

Boonekamp, P.G.M. (ECN, Petten (Netherlands));

Mannaerts, H. (CPB, Den Haag (Netherlands)); Tinbergen, W. (CBS, Den Haag (Netherlands));

Vreuls, H.H.J. (NOVEM, Utrecht (Netherlands)); Wesselink, B. (RIVM, Bilthoven (Netherlands))

ECN-C--01-129

Petten : ECN, December 2001. – 82 p.

Keywords: Monitoring; Energy use

Renewable energy burden sharing REBUS : effects of burden sharing and certificate trade on the renewable electricity market in Europe

Voogt, M.H.; Uytterlinde, M.A.; Noord, M. de (ECN, Petten (Netherlands));

Skytte, K.; Nielsen, L.H. (RISØ, Roskilde (Denmark)); Leonardi, M. (SERVEN, Milano (Italy));

Whiteley, M.H.; Chapman, M. (ESD, Corsham, Wiltshire (United Kingdom))

ECN-C--01-030

Petten : ECN, May 2001. – 113 p.

Keywords: Renewable energy sources; European Union; Certification; Quality assurance; Trade; Market; Electric power; R codes; Cost estimation; Prices; Cost benefit analysis; Government policies; Competition

Renewable energy burden sharing REBUS : requirements and expectations of utilities and consumer organisations in the renewable electricity sector in Europe

Uyterlinde, M.A.; Voogt, M.H. (ECN, Petten (Netherlands));

Skytte, K. (RISØ, Roskilde (Denmark)); Leonardi, M. (SERVEN, Milano (Italy)); Whiteley, M.H. (ESD, Corsham, Wiltshire (United Kingdom))

ECN-C--01-031

Petten : ECN, May 2001. – 52 p.

Keywords: Renewable energy sources; European Union; Certification; Quality assurance; Trade; Market; Electric power; R codes; Cost estimation; Prices; Cost benefit analysis; Government policies; Competition

Renewable energy burden sharing - REBUS : manual for the REBUS model

Voogt, M.H.

ECN-I--01-006

Petten : ECN, April 2001. – 25 p.

Keywords: R codes; Manuals; European Union; Certification; Renewable energy sources; Electricity; Cost; Decision making; Trade; Prices; Regional analysis

Sharing the burden of greenhouse gas mitigation

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkers, C.H.; Ybema, J.R.; Ormel, F.; (ECN, Petten (Netherlands));

Torvanger, A.; Ringeus, L.; Underdal, A. (CICERO, Oslo (Norway))

ECN-C--01-009

Petten : ECN, May 2001. – 58 p.

Keywords: Greenhouse gases

Standardised baselines for small-scale CDM activities : a proposal for the CDM Programme of the Netherlands. Discussion paper

Martens, J.W.; Rooijen, S.N.M. van (ECN, Petten (Netherlands));

Wijnants, H.J. (DHV, Amersfoort (Netherlands)); Bovée, V. (EcoSecurities, Oxford (United Kingdom))

ECN-C--01-122

Petten : ECN, December 2001. – 98 p.

Keywords: Clean Development Mechanism (CDM)

Streamlining CDM procedures for solar home systems (part A): a review of issues and options

Martens, J.W. (ECN, Petten (Netherlands));

Kaufman, S. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

ECN-C--01-098

Petten : ECN, December 2001. – 59 p.

Keywords: Clean Development Mechanism (CDM); Solar home systems

Techniekontwikkeling in een veranderde energievoorziening : herbezinning op de Nederlandse R&D-aanpak

Boonekamp, P.G.M.; Dril, A.W.N. van; Feber, M.A.P.C. de; Spoelstra, S.

ECN-C--01-022

Petten : ECN, February 2001. – 41 p.

Keywords: Netherlands; Research programs; Demonstration programs; Energy policy; Technology assessment; Financial incentives; Implementation; Market

The MATTER project : integrated energy and materials systems engineering for GHG emission mitigation

Kram, T.

ECN-C--01-017

Petten : ECN, April 2001. – 179 p.

Keywords: MATTER model; Energy consumption

The interaction between electricity, heat and gas in a tradable green certificate system : paper for the analysis phase of InTraCert

Boots, M.G.; Schaeffer, G.J.; Zoeten-Dartenset, C. de

ECN-I--01-012

Petten : ECN, August 2001. – 29 p.

Keywords: Green certificate

The interaction of tradable instruments in renewable energy and climate change markets : final report

Boots, M.G.; Schaeffer, G.J.; Zoeten-Dartenset, C. de (ECN, Petten (Netherlands));

Mitchell, C.; Anderson, T. (CMUR, Warwick (United Kingdom)); Morthorst, P.E.; Nielsen, L. (RISØ, Roskilde (Denmark)); Kühn, I.; Bräuer, W.; Stronzik, M. (ZEW, Mannheim (Germany)); Gual, M.; Rio, P. del; Cadenas, A. (UAM, Madrid (Spain))

ECN-C--01-048

Petten : ECN, December 2001. – 82 p.

Keywords: Renewable energy; Tradable green certificates; TGC; Intracert; GHG reduction

The multi-sector convergence approach : a flexible framework for negotiating global rules for national greenhouse gas emissions mitigation targets

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkens, C.H.; Ybema, J.R.

ECN-C--01-007

Petten : ECN, April 2001. – 35 p.

Keywords: Sectoral analysis; Planning; Cost estimation; Comparative evaluations; Emission; Mitigation; Air pollution abatement; Simulation; International agreements; Trade; Implementation; Greenhouse gases; Developed countries; Developing countries; Negotiation

The multi-sector convergence approach of burden sharing : an analysis of its cost implication

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkens, C.H.; Ybema, J.R.

ECN-C--01-008

Petten : ECN, March 2001. – 25 p.

Keywords: Sectoral analysis; Planning; Cost estimation; Comparative evaluations; Emission; Mitigation; Air pollution abatement; Simulation; International agreements; Trade; Implementation; Greenhouse gases; Developed countries; Developing countries; Negotiation

The role of nuclear energy in establishing sustainable energy paths

Bruggink, J.J.C. (ECN, Petten (Netherlands));
Zwaan, B.C.C. van der (IVM, Amsterdam (Netherlands))
ECN-C--01-109
Petten : ECN, November 2001. – 42 p.
Keywords: Energy supply

Towards a streamlined CDM process for solar home systems

Martens, J.W.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));
Kaufman, S.L. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT
Power, Chineham, Hampshire (United Kingdom))
ECN-RX--01-073
Petten : ECN, December 2001. – 4 p.
Keywords: Developing countries; Solar Home Systems; Clean Development Mechanism

Verhandelbare systemen in het Nederlandse klimaat : nationale emissiemarkten

Boots, M.G.; Feber, M.A.P.C. de; Wals, A.F. (ECN, Petten (Netherlands));
Koster, M. (RUG, Groningen (Netherlands))
ECN-C--01-044
Petten : ECN, September 2001. – 60 p.
Keywords: CO2 reduction; Energy consumption

Verificatie CO2-meter voor de Stichting FACE

Menkveld, M.
ECN-C--01-106
Petten : ECN, November 2001. – 20 p.
Keywords: CO2 emissions

What scenario studies tell about security of energy supply in Europe

Lako, P.; Jansen, J.C.
ECN-C--01-054
Petten : ECN, June 2001. – 56 p.
Keywords: Energy supplies; Security; Reserves; European Union; Energy policy; Netherlands;
Petroleum; Natural gas; Coal; Forecasting; Energy demand; Supply and demand; Carbon dioxide;
Emission; Global aspects

2.3 ECN Biomass

Cascadering van maaisel : winning van industrieel toepasbare hernieuwbare grondstoffen gecombineerd met de opwaardering van brandstofkwaliteit voor de opwekking van energie

Doorn, J. van; Keijsers, E.R.P.; Elbersen, H.W.

ECN-C--01-050

Petten : ECN, May 2001. – 48 p.

Keywords: Mowing materials; Energy generation; CO2 reduction

Co-production of bio-ethanol, electricity and heat from biomass wastes : potential and R&D issues

Reith, J.H.; Veenkamp, J.M.; Ree, R. van (ECN, Petten (Netherlands));

Laat, W.T.A.M. de; Niessen, J.J. (Royal Nedalco BV, Bergen op Zoom (Netherlands)); Jong, E. de; Elbersen, H.W.; Claassen, P.A.M. (Agrotechnological Research Institute ATO BV, BU Renewable Resources (Wageningen, Netherlands))

ECN-RX--01-011

Petten : ECN, April 2001. – 12 p.

Keywords: Bio-ethanol; Electricity; Biomass wastes; Heat

Co-production of fuels as an option for Demkolec? : a preliminary review of opportunities for the co-production of liquid or gaseous energy carriers

Lange, T.J. de; Beeldman, M.; Kiel, J.H.A.; Uil, H. den; Veenkamp, J.M.

ECN-C--01-004

Petten : ECN, March 2001. – 69 p.

Keywords: Energy carriers; Coal gasification

De-centralised power production using low-calorific value gas from renewable energy resources in gas turbines

Rabou, L.P.L.M. (ECN, Petten (Netherlands));

Jansen, D. (OPRA BV, Hengelo (Netherlands))

ECN-C--01-056

Petten : ECN, June 2001. – 34 p.

Keywords: Biomass gasification; Gas engine; Gas turbine; Low-calorific gas; Combined heat and power

Fluidised bed combustion installation NARGUS

Doorn, J. van

ECN-B--01-002

Petten : ECN, January 2001. – 2 p.

Keywords:

Fuel and ash behaviour in PF combustion

Kiel, J.H.A.; Korbee, R.

ECN-B--01-005

Petten : ECN, January 2001. – p.

Keywords:

Gas and Fuel Analysis

Bakker, F.P.; Doorn, J. van

ECN-B--01-019

Petten : ECN, July 2001. – 2 p.

Keywords:

Implementation of thermal processes for feedstock recycling of bromine, with energy recovery, from plastics waste of electrical and electronic equipment (WEEE). Phase 2: production of bromine salt in staged-gasification to determine technical feasibility of bromine recovery

Boerrigter, H. ; Bodenstaff, H.; Geusebroek, M.; Kuipers, J.; Oudhuis, A.B.J.; Wilberink, R.W.A.
ECN-C--01-110

Petten : ECN, October 2001. – 31 p.

Keywords: EBFRIIP; WEEEEE; BFR; Bromine; Chlorine; Antimony; Energy recovery; Thermal processes; Staged-gasification; Gasification; Pyrolysis

Inzet (en verkrijgbaarheid) van biomassa als brandstof

Ree, R. van

ECN-RX--01-068

Petten : ECN, November 2001. – 13 p.

Keywords: Biomassa; Brandstof

Inzet geavanceerde ECN Biomassa-conversietechnologieën voor Nederlandse VGI reststromen : eindrapport NECST-project 249.402-0260

Boersma, A.R.; Hemmes, K.

ECN-C--01-119

Petten : ECN, December 2001. – 46 p.

Keywords: Voedingsmiddelenindustrie; VGI; Organische reststromen; Conversietechnieken; Biomassa; Afval; Energie

Meat and bone meal as fuel

Beesteheerde, J.; Kiel, J.H.A.

ECN-B--01-003

Petten : ECN, January 2001. – 2 p.

Keywords:

Milieutechnische en financieel-economische 'Quick-scan'

Ree, R. van

ECN-B--01-009

Petten : ECN, January 2001. – 2 p.

Keywords:

Operational experiences of (in)direct co-combustion in coal and gas fired power plants in Europe

Ree, R. van; Korbee, R. (ECN, Petten (Netherlands));

Meijer, R.; Konings, T.; Aart, F. van (KEMA, Arnhem (Netherlands))

ECN-RX--01-008

Petten : ECN, February 2001. – 18 p.

Keywords: Operation; Cocombustion; Coal; Natural gas; Fossil-fuel power plants; Europe; Biomass; Wastes; Environmental effects; Efficiency; Gasification; Pyrolysis; Comparative evaluations; Slags; Fouling; Corrosion; Erosion; Fly ash; Ashes; Gypsum; Emission

Phyllis fase 4 : onderhoud, uitbreiding en statistische onderbouwing

Rabou, L.P.L.M.; Doorn, J. van; Drift, A. van der

ECN-C--01-039

Petten : ECN, April 2001. – 18 p.

Keywords: Biomassa; Samenstelling; Verbrandingswaarde

Phyllis fase 5 : implementatie van een classificatie macro en onderhoud/uitbreiding

Rabou, L.P.L.M.; Doorn, J. van; Drift, A. van der

ECN-C--01-107

Petten : ECN, December 2001. – 15 p.

Keywords: Biomassa; Classificatie; Verbrandingswaarde

Roterende Deeltjes Scheider (RDS) voor reiniging van biomassa stookgassen

Meijden, C.M. van der; Neeft, J.P.A. (ECN, Petten (Netherlands));

Ploeg, F.B. van der

ECN-C--01-118

Petten : ECN, September 2001. – 28 p.

Keywords: Biomassa; Vergassing; Gasreiniging; Teer; RDS; RPS

Tiermehl als Brennstoff

Visser, H.J.M.

ECN-B--01-004

Petten : ECN, January 2001. – p.

Keywords:

2.4 ECN Energy Efficiency in Industry

A comparison of the eco-efficiency of two production routes for methanol

Hugill, J.A.; Overbeek, J.P.; Spoelstra, S.

ECN-I--01-003

Petten : ECN, February 2001. – 66 p.

Keywords: Methanol; Production; Energy efficiency; Exergy; Electrochemistry; Life cycle; Material balance; Energy balance; Flowsheets; Comparative evaluations; Environmental impacts

Dewatering of organics by pervaporation with silica membranes

Veen, H.M. van; Delft, Y.C. van; Engelen, C.W.R.; Pex, P.P.A.C.

ECN-RX--01-066

Petten : ECN, October 2001. – 15 p.

Keywords: Pervaporation; Dewatering; Silica; Ceramic membrane

Eindrapportage BIO-LICHT : lichtgewicht transportmiddelen op basis van hernieuwbare grondstoffen

Nauta, J.P.; Overbeek, J.P.; Braam, J. (ECN, Petten (Netherlands));

Bos, H. (CINTEC/FOCWA, Sassenheim (Netherlands)); Brouwer, R. (Technische Universiteit

Delft, Delft (Netherlands)); Pott, G. (CERES, Wageningen (Netherlands)); Van Rooijen, D.

(KIEM, Amsterdam (Netherlands)); Visser, J. (Wientjes Kunststoffen, Emmen (Netherlands));

Van Voorn, B. (ATO-DLO, Wageningen (Netherlands))

ECN-C--01-036

Petten : ECN, March 2001. – 63 p.

Keywords: Biolicht; Transport; Spoilers; Fenders; Levenscyclusanalyse; Emissiereductie; Brandstofgebruik; LCA

Evaluatie en toepassingsmogelijkheden compressie resorptie warmtepompen

Boer, R. de; Bach, P.W.

ECN-C--01-087

Petten : ECN, August 2001. – 43 p.

Keywords: Compression resorption heat pumps; Energy efficiency; Industrial processes; Economical evaluation

Heat storage and transformation

Bach, P.W.; Haije, W.G.

ECN-RX--01-036

Petten : ECN, October 2001. – 17 p.

Keywords: Heat storage

Kristallisatie : een belangrijke processtap in de productie van een vaste-stof/damp reactor

Dijkstra, J.W.; Boer, R. de

ECN-I--01-019

Petten : ECN, December 2001. – 44 p.

Keywords: Kristallisatie; Vaste-stof/damp sorptie systemen; Thermodynamica; Fasendiagrammen; Kristalgroei; Nucleatie; Deeltjesgrootteverdeling; Kristallisor

**Overzicht commercieel verkrijgbare warmtewisselaars : technische en economische ken-
tallen**

Smeding, S.F.

ECN-I--01-009

Petten : ECN, July 2001. – 66 p.

Keywords: Restwarmte; Warmteoverdracht; Compacte warmtewisselaar; Shell and Tube; Platen-
warmtewisselaar; Warmteoverdrachtscoëfficiënt; Enhanced heattransfer; Kosten; Vervuiling;
Drukval; Chemische reactie

Prestatiemetingen aan een foto-elektrochemische reactor

Correia, L.A.; Dorst, E.M. van

ECN-I--01-004

Petten : ECN, February 2001. – 27 p.

Keywords: Electrochemistry; Chemical reactors; Photovoltaic cells; Titanium oxides; Electro-
chemical cells; Performance; Energy efficiency; Systems analysis; Service life; Cost; Photoan-
odes; Carbon; Platinum; Electrocatalysts; Photocurrents; Water; Oxygen; Protons; Solar radiation

**Reduction of energy consumption in the process industry by pervaporation with inorganic
membranes : techno-economical feasibility study**

Veen, H.M. van

ECN-C--01-073

Petten : ECN, July 2001. – 29 p.

Keywords: Pervaporation; Ceramic membrane; Energy efficiency; Process design

**Skid mounted pervaporatie unit op basis van anorganische membranen : bouw en in ge-
bruikname van de unit**

Veen, H.M. van; Jong, G. de; Engelen, C.W.R.; Gerritsjans, M.M.B.; Pex, P.P.A.C.

ECN-C--01-040

Petten : ECN, September 2001. – 35 p.

Keywords: Pervaporation; Ceramic membrane; Test installation

**Techniekontwikkeling in een veranderde energievoorziening : herbezinning op de Neder-
landse R&D-aanpak**

Boonekamp, P.G.M.; Dril, A.W.N. van; Feber, M.A.P.C. de; Spoelstra, S.

ECN-C--01-022

Petten : ECN, February 2001. – 41 p.

Keywords: Netherlands; Research programs; Demonstration programs; Energy policy; Technol-
ogy assessment; Financial incentives; Implementation; Market

**Technologies and prospects for photochemical conversion and storage of solar energy : a
survey of the state-of-the-art**

Boer, R. de

ECN-C--01-029

Petten : ECN, February 2001. – 37 p.

Keywords: Photochemical reactions; Photochemical energy storage; Energy efficiency; Tech-
nology assessment; Reviews; Semiconductor materials; Photoelectrochemical cells; Hydrogen
storage

2.5 ECN Clean Fossil Fuels

Aerosol; cycle and influence on the radiation balance = MEMORA: Measurement and Modeling of the reduction of Radiation by Aerosol

Brink, H.M. ten ; Hensen, A.; Khlystov, A. (ECN, Petten (Netherlands));
Dorland, R. van ; Jeuken, A.; Velthoven, P. van (KNMI, De Bilt (Netherlands)); Lelieveld, J.;
Berg, A. van den (IMAU, Utrecht (Netherlands)); Swart, D.P.J.; Bergwerff, J.B.; Apituley, A.
(RIVM, Bilthoven (Netherlands)); Veefkind, J.P. (FEL-TNO, The Hague (Netherlands))

ECN-R--01-003

Petten : ECN, June 2001. – 133 p.

Keywords: Aerosols

Analysis and feasibility of advanced gas turbine cycles and applications : the partial oxidation gas turbine and the gas turbine with air bottoming cycle

Dijkstra, J.W.

ECN-C--01-075

Petten : ECN, August 2001. – 32 p.

Keywords: Sub-stoichiometric combustion; Partial oxidation gas turbine; Recuperated gas turbine; Reheat gas turbine; Dairy industry; Exergy analysis; Syngas production; Spary dryer; Methanol production; Air bottoming cycle; Bakery furnace

Catalytic production of hydrogen from methanol

Wild, P.J. de; Verhaak, M.J.F.M.

ECN-RX--01-005

Petten : ECN, January 2001. – 15 p.

Keywords: Methanol; Hydrogen production; Catalytic steam reforming; Catalytic washcoat; Foam; Heat exchanger

Characteristics, treatment and utilization of residues from municipal waste incineration

Sloot, H.A. van der (ECN, Petten (Netherlands));

Kosson, D.S. (Vanderbilt Univ., Nashville, Tennessee, (US)); Hjelmar, O. (DHI, Horsholm (Denmark))

ECN-RX--01-009

Petten : ECN, February 2001. – 21 p.

Keywords: Leaching; Treatment; Waste incineration; Residues; Environmental impact; Ash

Co-production of fuels as an option for Demkolec? : a preliminary review of opportunities for the co-production of liquid or gaseous energy carriers

Lange, T.J. de; Beeldman, M.; Kiel, J.H.A.; Uil, H. den; Veenkamp, J.M.

ECN-C--01-004

Petten : ECN, March 2001. – 69 p.

Keywords: Energy carriers; Coal gasification

Combined catalytic removal of N₂O and NO_x from the tail gases of a nitric acid plant

Brink, R.W. van den

ECN-RX--01-012

Petten : ECN, April 2001. – 15 p.

Keywords: Emission reduction; Nitrous oxide; N₂O greenhouse gases; Nitric oxides; NO_x; Abatement; Selective catalytic reduction; SCR

Construction the European aerosol nitrate concentration field from experimental data

Schaap, M.; Brink, H.M. ten (ECN, Petten (Netherlands));
Müller, K. (Institut für Troposphäre e.V., Leipzig (Germany))
ECN-RX--01-033

Petten : ECN, June 2001. – 38 p.

Keywords: Nitrate field; Sampling artefacts; Critical evaluation

Development of standard leaching tests for organic pollutants in soils, sediments and granual waste materials : final report

Comans, R.N.J. ; Roskam, G.; Oosterhoff, A.; Shor, L. (ECN, Petten (Netherlands));
Wahlstrom, M.; Laine-Ylijoki, J.; Pihlajaniemi, M.; Ojala, M. (VTT, Espoo (Finland)); Broholm, K.; Villholth, K.; Hjelmar, O. (DHI, Horsholm (Denmark)); Heimovaara, T.; Keijzer, J.; Keijzer, H. (IWACO, Rotterdam (Netherlands))

ECN-C--01-121

Petten : ECN, December 2001. – 179 p.

Keywords: Standard leaching tests; Organic pollutants; Soils; Granular; Waste materials

Environmental criteria for cement based products ECRICEM Phase I: Ordinary Portland Cements (executive summary included)

Sloot, H.A. van der; Hoede, D.; Rietra, R.P.J.J. (ECN, Petten (Netherlands));
Stenger, R.; Lang, Th. (Holcim Group Support, Holderbank (Switzerland)); Schneider, M.; Spanka, G. (VDZ, Düsseldorf (Germany)); Stoltenberg-Hansson, A. (NORCEM, Brevik (Norway)); Lerat, A. (Ciments d'Obourg, Obourg (Belgium))

ECN-C--01-069

Petten : ECN, December 2001. – 228 p.

Keywords: Leaching; Long term behaviour; Mortar; Portland cement; Environmental impact; Trace elements; Life cycle

European activities on harmonisation of leaching/extraction tests and standardisation in relation to the use of alternative materials in construction

Sloot, H.A. van der

ECN-RX--01-045

Petten : ECN, July 2001. – 13 p.

Keywords: Leaching

Evaluatie van waterstof-gebaseerde concepten en systemen : rapport fase 1

Reijers, H.T.J.; Groot, A. de; Lako, P.

ECN-C--01-019

Petten : ECN, April 2001. – 142 p.

Keywords: Concept; Systeem; Waterstoftechnologie; Keten; NOx reductie; CO2 reductie; Duurzame energie; Infrastructuur; Actor; Waterstofproductie; Waterstofopslag; Waterstoftransport; Waterstofgebruik; Hydrogen technology; Chain; NOx reduction; CO2 reduction; Renewable energy; Infra structure; Hydrogen production; Hydrogen storage; Hydrogen transport; Hydrogen use

Evaluation of the chromium speciation in Israeli coal fly ashes

Sloot, H.A. van der; Rietra, R.P.J.J.; Dijkstra, J.J.; Hoede, D.

ECN-C--01-094

Petten : ECN, September 2001. – 33 p.

Keywords: Coal fly ash; Leaching

Examining a potential fuel cell poison : a voltammetry study of the influence of carbon dioxide on the hydrogen oxidation capability of carbon supported Pt and PtRu anodes

Papageorgopoulos, D.C.; Bruijn, F.A. de

ECN-RX--01-051

Petten : ECN, October 2001. – 31 p.

Keywords: Fuel cells

Gas and Fuel Analysis

Bakker, F.P.; Doorn, J. van

ECN-B--01-019

Petten : ECN, July 2001. – 2 p.

Keywords:

Geavanceerde gasturbinecycli in de brood- en & banket- en in de zuivelindustrie

Dijkstra, J.W. (ECN, Petten (Netherlands));

Rouwen, W.; Sluimer, P. (TNO Voeding, Zeist (Netherlands)); Verdurmen, R. (NIZO Food Research, Ede (Netherlands))

ECN-C--01-076

Petten : ECN, August 2001. – 68 p.

Keywords: Feasibility study; Air bottoming cycle; Gas turbines; Dairy industry; Bakery industry

Implementation of thermal processes for feedstock recycling of bromine, with energy recovery, from plastics waste of electrical and electronic equipment (WEEE). Phase 2: production of bromine salt in staged-gasification to determine technical feasibility of bromine recovery

Boerrigter, H. ; Bodenstaff, H.; Geusebroek, M.; Kuipers, J.; Oudhuis, A.B.J.; Wilberink, R.W.A.
ECN-C--01-110

Petten : ECN, October 2001. – 31 p.

Keywords: EBFRIIP; WEEEEE; BFR; Bromine; Chlorine; Antimony; Energy recovery; Thermal processes; Staged-gasification; Gasification; Pyrolysis

Indec B.V. : power from ceramics

Huiberts, R.C.; Huijismans, J.P.P.

ECN-B--01-012

Petten : ECN, January 2001. – 2 p.

Keywords:

Integration of lab-scale testing and pilot scale monitoring of a stabilised waste landfill to reach sustainable landfill

Rietra, R.P.J.J.; Sloot, H.A. van der; Zomeren, A. van (ECN, Petten (Netherlands));

Bleijerveld, R. (VBM, Rotterdam (Netherlands))

ECN-RX--01-040

Petten : ECN, August 2001. – 11 p.

Keywords: Landfill

Inventarisatie fuel processing opties voor vervoerstoepassingen

Dijkstra, J.W.; Veenkamp, J.M.

ECN-C--01-097

Petten : ECN, December 2001. – 34 p.

Keywords: Fossil fuels; Hydrogen; PEMFC; Syngas

Inventarisatie van sensoren voor de bepaling van de binnenluchtkwaliteit

Wilde, H.P.J. de; Cnubben, P.A.J.P.; Bakker, F.P.; Römer, J.C. (ECN, Petten (Netherlands));

Jong, P. de (NRG, Arnhem (Netherlands))

ECN-C--01-046

Petten : ECN, October 2001. – 58 p.

Keywords: Binnenluchtkwaliteit; Energiezuinige gebouwen; Luchtkwaliteitsensoren; Sensorgestuurde ventilatiesystemen; Energiebesparing

Leaching behaviour of Essent Bioreactor rest product at different stages of degradation in lab and pilot scale to assess potential utilization options

Sloot, H.A. van der (ECN, Petten (Netherlands));

Woelders, H. (Essent, Wijster (Netherlands))

ECN-RX--01-043

Petten : ECN, July 2001. – 11 p.

Keywords: Flushing bioreactor; Residues; Leaching; Trace elements; Environmental impact; Re-use

Leaching behaviour of artificial aggregates : EU project BRST-CT98-5234

Sloot, H.A. van der; Hoede, D.; Rietra, R.P.J.J.

ECN-C--01-014

Petten : ECN, December 2001. – 190 p.

Keywords: Leaching; Aggregates; Modelling; Long term behaviour; Trace elements

Mogelijkheden tot verbetering van de voorspellende waarde van laboratorium-uitloogproeven voor de praktijk (ANVM 228)

Sloot, H.A. van der; Rietra, R.P.J.J. (ECN, Petten (Netherlands));

Mulder, E.; Hage, J.L.T.; Brouwer, J.P. (TNO-MEP, Apeldoorn (Netherlands))

ECN-C--01-027

Petten : ECN, November 2001. – 72 p.

Keywords: Laboratory tests; Leaching

Particulate matter in urban air: health risks, instrumentation, measurements and political awareness

Weijers, E.P.; Even, A.; Kos, G.P.A.; Groot, A.T.J.; Erisman, J.W.; Brink, H.M. ten

ECN-R--01-002

Petten : ECN, July 2001. – 69 p.

Keywords: Particulate matter; Urban air quality; Vehicle emissions; Health effects; Particle mass; Chemical composition; Sampling; Analysis; SJAC; CPC; LAS-X

Performance testing of a self-forming & self-repairing seal

Zomeren, A. van (ECN, Petten (Netherlands));

Cnubben, P.A.J.P.

ECN-C--01-082

Petten : ECN, August 2001. – 17 p.

Keywords: Performance testing; Seal

Pilot production of planar SOFC components at InDEC Ltd

Huiberts, R.C.; Huijsmans, J.P.P.

ECN-RX--01-007

Petten : ECN, January 2001. – 4 p.

Keywords: Ceramics; Sofc; Innovation; Fuel cells

Similarities in the long term leaching behaviour of predominantly inorganic waste, MSWI bottom ash, degraded MSW and bioreactor residues

Sloot, H.A. van der; Rietra, R.P.J.J. (ECN, Petten (Netherlands));

Vroon, R.C. (TNO-MEP, Apeldoorn (Netherlands)); Scharff, H. (Afvalzorg Deponie, Haarlem (Netherlands)); Woelders, J.A. (Essent, Wijster (Netherlands))

ECN-RX--01-044

Petten : ECN, July 2001. – 10 p.

Keywords: Leaching

The effect of aerosol on closure of the regional short-wave radiation balance : CLOSAeR

Brink, H.M. ten (ECN, Petten (Netherlands));

Stammes, P.; Henzing, J.S.; Knap, W.H. (KNMI, De Bilt (Netherlands)); Swart, D.P.J.; Apituley, A.; Bergwerff, J.B. (RIVM, Bilthoven (Netherlands))

ECN-RX--01-042

Petten : ECN, December 2001. – 106 p.

Keywords: Aerosol

The influence of carbon dioxide on PEM fuel cell anodes

Bruijn, F.A. de; Papageorgopoulos, D.C.; Sitters, E.F.; Janssen, G.J.M.

ECN-RX--01-065

Petten : ECN, October 2001. – 23 p.

Keywords: PEM fuel cell (PEMFC); Reformate; CO₂-tolerance; Reverse water gas shift

Throughfall monitoring at 4 sites in the Netherlands between 1995 and 2000

Erisman, J.W.; Mols, J.J.; Fonteijn, P.B.; Bakker, F.P.

ECN-C--01-041

Petten : ECN, May 2001. – 23 p.

Keywords: Forest ecosystems; Data; Atmospheric deposition

Verkennd onderzoek modernisering VLW

Vermeulen, A.T.

ECN-C--00-117

Petten : ECN, February 2001. – 15 p.

Keywords: Verkeersemmissies; Dispersie; Luchtverontreiniging; Modelling; Trace-ontwerp; Gaussisch pluimmodel

Voortgangsrapportage over het jaar 2000 : klimaatveranderingen en aërosolen. Een project uitgevoerd in opdracht van het ministerie van Economische Zaken

Brink, H.M. ten; Schaap, M.; Vermeulen, A.; Even, A.; Slanina, J.; Erisman, J.W.; Groot, G.J. de (ECN, Petten (Netherlands));

Builtjes, P. (TNO-MEP, Apeldoorn (Netherlands))

ECN-I--01-014

Petten : ECN, September 2001. – 45 p.

Keywords: Klimaatverandering; Aerosolen

2.6 ECN Technological Services & Consultancy

Cf/SiC/C composites for tribological application

Rak, Z.S.; Berkeveld, L.; Snijders, G.

ECN-RX--01-010

Petten : ECN, March 2001. – 25 p.

Keywords: C/SiC composites; Manufacturing methods; Low-cost processing; Carbon fibres; Silicon carbide; Phenolic resin; Pressure infiltration; Resin infiltration; Pyrolysis; Tribological tests; Automotive application

De axiale-fluxgenerator van Octopus Wind Technology : een haalbaarheidsstudie

Schie, R.G. van

ECN-C--01-024

Petten : ECN, February 2001. – 74 p.

Keywords: Feasibility studies; Flux pumps; Electric generators; Wind turbines; Rotors; Magnetic flux; Permanent magnets; Bearings; Hydrostatic bearings; Magnetic bearings

Metallografie en fractografie in nucleair materiaalonderzoek : reparatielassen van bestraald ASI316L en schadetolerantie in reactorvatmeritaliaal A508c13

Schuring, E.W.

ECN-RX--01-038

Petten : ECN, June 2001. – 21 p.

Keywords: Metallografie; Fractografie; Materiaalonderzoek

Qualification test program futura CFRP tubes

Schuring, E.W.

ECN-C--01-126

Petten : ECN, November 2001. – 42 p.

Keywords: Interlaminar shear tests; Compressor strength; Carbon Fibre Reinforced Plastic (CFRP); Mechanical properties; Microstructure

Theory and user manual BLADOPT

Bulder, B.H.; Barhorst, S.A.M.; Schepers, J.G. (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

ECN-C--01-011

Petten : ECN, September 2001. – 91 p.

Keywords: Wind turbine optimization; Theory and user manual

2.7 ECN Wind Energy

Aërodynamische tabel generator : handleiding

Bot, E.T.G.

ECN-C--01-077

Petten : ECN, August 2001. – 22 p.

Keywords: Aerodynamische coëfficiënten; Windturbinebladen

Aërodynamische tabel generator : technische beschrijving

Bot, E.T.G.

ECN-C--01-130

Petten : ECN, December 2001. – 31 p.

Keywords: Aerodynamische coëfficiënten; Windturbinebladen

Alles in de wind : vragen en antwoorden over windenergie

Beurskens, H.J.M. (ECN, Petten (Netherlands));

Kuijk, G. van (TU, Delft (Netherlands))

ECN-P--01-006

Petten : ECN, May 2001. – 32 p.

Keywords: Windenergie

Application of an advanced cost model in the different design phases of an offshore wind turbine

Hendriks, H.B.; Lindenburg, C.; Kooijman, H.J.T.; Bulder, B.H. (ECN, Petten (Netherlands));

Bozelie, J.; Madsen, J.B. (NEG Micon, Heerenveen (Netherlands)); Halfschepel, R. (Van Oord

ACZ, Gorinchem (Netherlands)); Molenaar, W. (Ballast Nedam, Nieuwegein (Netherlands));

Berg, R. van den (LM Glasfiber, Den Helder (Netherlands)); Zaaier, M. (TU, Delft (Netherlands))

ECN-RX--01-058

Petten : ECN, September 2001. – 5 p.

Keywords: Wind turbines; Off-shore; Cost analyses; Optimization

Conditiebewaking aan windturbines : een verkennende studie

Verhoef, J.P.; Verbruggen, T.W.

ECN-C--01-058

Petten : ECN, June 2001. – 36 p.

Keywords: Wind turbines; Literatuurstudie

Cost and potential of offshore wind energy on the Dutch part of the North Sea

Kooijman, H.J.T.; Noord, M. de; Volkers, C.H.; Machielse, L.A.H.; Eecen, P.J.; Pierik, J.T.G.;

Herman, S.A.; (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

ECN-RX--01-063

Petten : ECN, September 2001. – 4 p.

Keywords: Resources; Cost analyses; Cost of energy; Off-shore

DOWEC Concept Study. Task 7: standards and criteria for offshore wind turbines.

Hendriks, H.B.; Soullie, P.P.

ECN-C--01-078

Petten : ECN, August 2001. – 68 p.

Keywords: Wind turbines; Wind energy; Offshore; Standards

DOWEC concept study. Task 11: selection of feasible concepts

Heijdra, J.J.; Hendriks, H.B.

ECN-C--01-079

Petten : ECN, August 2001. – 32 p.

Keywords: Wind turbine concepts

DOWEC concept study. Task 12: cost comparison of the selected concepts

Bulder, B.H. (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands)); Bussel, G.J.W. van; Zaaier, M.B. (Technical University, Delft (Netherlands))

ECN-C--01-080

Petten : ECN, August 2001. – 34 p.

Keywords: Wind energy; Optimisation; Cost of energy; Off-shore; Wind energy converter

DOWEC concept study. Task 8: control and protection concepts : promising concepts for offshore wind turbines

Hendriks, H.B.; Pierik, J.T.G.

ECN-C--01-081

Petten : ECN, August 2001. – 30 p.

Keywords: Wind turbines; Wind energy; Concept; Offshore; Control; Protection; Safety

Development of wind turbine control algorithms for industrial use

Engelen, T.G. van; Hooft, E.L. van der; Schaak, P.

ECN-RX--01-060

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Control; Variable speed operation; Dynamic models

Duurzame energie in Lopik : praktisch potentieel voor duurzame energie

Dijk, A.L. van; Ligthart, F.A.T.M.; Westra, C.A. (ECN, Petten (Netherlands));

Dekkers, J. (WEOM, Veenendaal (Netherlands))

ECN-C--01-091

Petten : ECN, September 2001. – 50 p.

Keywords: Lopik; Duurzame energie; DE-scan; Energiebesparing; Instrumenten

EU projects in German Dutch Wind Tunnel, DNW

Schepers, J.G.

ECN-RX--01-006

Petten : ECN, January 2001. – 11 p.

Keywords: Netherlands; Federal republic of Germany; Wind tunnels; Program management; Airfoils; Acoustic measurements; Rotors; Test facilities; Aerodynamics; Design; Computer calculations; Power

European wind turbine certification EWTC : guidelines for design evaluation of wind turbines

Hulle, F.J.L. van (ECN, Petten (Netherlands));

Nath, C. (GL Wind, Hamburg (Germany)); Jensen, P.H. (RISØ, Roskilde (Denmark)); Eriksson, C. (DNV, Hellerup (Denmark)); Vionis, P. (CRES, Attiki (Greece))

ECN-C--01-059

Petten : ECN, August 2001. – 44 p.

Keywords: Wind energy; Certification; European harmonisation

Evaluation of the 10th international course on implementation of wind energy : ECN, April 2-13, 2001

Hulle, F.J.L. van (ECN, Petten (Netherlands));

Jongh, J.A. de; Jongh-Versteegh, G.C. de (Arrakis, Waalwijk (Netherlands)); Bakker, L. (Buro Netwerk, Schoorl (Netherlands))

ECN-C--01-088

Petten : ECN, September 2001. – 46 p.

Keywords: Human resource management; Energy management; Energy programme; Energy planning; Electricity supply; Grid connection; Implementation of wind energy manufacturing; Installation and monitoring; Operating experiences; Pre-investment studies; Project management; Standards and certificates; Technology assessment; Training course; Wind electric battery chargers; Wind energy; Wind pumps; Wind farm design; Wind resources; Capacity building

Harmonisation of European wind turbine certification

Hulle, F.J.L. van (ECN, Petten (Netherlands));

Nath, C. (GL Wind, Hamburg (Germany)); Hjuler Jensen, P. (RISØ, Roskilde (Denmark)); Eriksson, C. (DNV, Hellerup (Denmark)); Vionis, P. (CRES, Attiki (Greece))

ECN-RX--01-055

Petten : ECN, September 2001. – 4 p.

Keywords: Wind turbines; Certification; European harmonisation

Heat generation by a wind turbine

Corten, G.P.

ECN-RX--01-001

Petten : ECN, January 2001. – 7 p.

Keywords: Heat; Wind turbines; Kinetic energy; Power generation; Actuators; Shear; Viscous flow; Heat transfer

IEA annex XIV/XVIII, field rotor aerodynamics

Schepers, J.G.; Brand, A.J. (ECN, Petten (Netherlands));

Madsen, H. (RISØ, Roskilde (Denmark)); Stefanatos, N. (CRES, Pikerimi (Greece)); Simms, D.; Hand, M. (NREL, Colorado (US)); Bruining, A.; Rooij, R. van (TU Delft, Delft (Netherlands)); Shimizu, Y.; Maeda, T. (Mie University, Mie (Japan)); Graham, M. (Imperial College, Department of Aeronautics, London (United Kingdom))

ECN-RX--01-056

Petten : ECN, September 2001. – 5 p.

Keywords: Aerodynamics; Blade aerodynamics; Data bases

Identification of variables for site calibration and power curve assessment in complex terrain (SiteParIden) : relative power curve measurements in complex terrain task 7

Werff, P.A. van der; Curvers, A.P.W.M.

ECN-C--01-102

Petten : ECN, November 2001. – 32 p.

Keywords: Cup anemometer; Performance measurements; Power curve; Turbulence intensity

Identification of variables for site calibration and power curve assessment in complex terrain JOR-CT98-0257 : task 8, a literature survey on theory and practice of parameter identification, specification and estimation (ISE) techniques

Verhoef, J.P.; Leendertse, G.P.

ECN-C--01-015

Petten : ECN, April 2001. – 23 p.

Keywords: Identification; Specification and estimation techniques; ISE-techniques; Data analysis; Wind energy; Site evaluation

Insects cause double stall

Corten, G.P. (ECN, Petten (Netherlands));

Veldkamp, H.F. (NEG Micon A.S., Randers (Denmark))

ECN-RX--01-052

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Insect accumulation; Double stall; Stall flags

Inviscid stall model

Corten, G.P.

ECN-RX--01-002

Petten : ECN, January 2001. – 8 p.

Keywords: Wind turbines; Rotors; Mathematical models; Air flow; Radial velocity; Pressure gradients; Coriolis force; Rotation

Inviscid stall model

Corten, G.P.

ECN-RX--01-053

Petten : ECN, September 2001. – 5 p.

Keywords: Wind turbines; Stall rotation effects; Three-dimensional flow effects; Boundary layer

Large wind turbines : design and economics

Snel, H. (ECN, Petten (Netherlands));

Harrison, R.; Hau, E.

ECN-P--01-007

Petten : ECN, January 2001. – 200 p.

Keywords: Wind turbines

NM3000-LMH46-5 blade design : aerodynamic parameter sensitivity study

Lindenburg, C.; Bot, E.T.G.; Hendriks, H.B.

ECN-C--00-077

Petten : ECN, May 2001. – 58 p.

Keywords: Aerodynamic optimisation; Cost of Energy; Dynamic loads; PHATAS program; Price performance ratio; Sensitivity analysis; Wind turbine

Novel views on the extraction of energy from wind : heat generation and terrain concentration

Corten, G.P.

ECN-RX--01-054

Petten : ECN, September 2001. – 5 p.

Keywords: Actuator disk model; Terrain; Siting

Numerical optimisation for wind turbine design, based on aero-elastic analysis

Bulder, B.H.; Schepers, J.G.

ECN-RX--01-064

Petten : ECN, September 2001. – 3 p.

Keywords: Wind turbines; Optimisation; Design tool

Ondersteuning implementatie bladhoekregeling windturbines

Engelen, T.G. van; Hooft, E.L. van der

ECN-C--01-067

Petten : ECN, December 2001. – 22 p.

Keywords: Control equipment; Wind turbines; Pitch control; Data processing; Pitch actuator; Rotary encoder

PEMSWECS. Performance Evaluation Methods for Autonomous, Applications Orientated Wind Turbine Systems : final report

Pierik, J.T.G. (ECN, Petten (Netherlands));

Dunlop, R.W.; Lee, W.K. (NEL, Glasgow (United Kingdom)); Gabriel, J. (DEWI, Wilhelmshafen (Germany))

ECN-C--01-090

Petten : ECN, June 2001. – 35 p.

Keywords: Power performance; Stand-alone wind turbines; Wind energy; Electric power; Electrical models

PEMSWECS. Performance Evaluation Methods for Autonomous, Applications Orientated Wind Turbine Systems : systems with batteries

Pierik, J.T.G.

ECN-C--01-032

Petten : ECN, August 2001. – 89 p.

Keywords: Power performance; Stand-alone wind turbines; Wind energy; Electric power; Electrical models

Performance evaluation methods for autonomous, applications orientated wind turbine systems

Pierik, J.T.G. (ECN, Petten (Netherlands));

Dunlop, R.W.; Lee, W.K. (NEL, Glasgow (United Kingdom)); Gabriel, J. (DEWI, Wilhelmshafen (Germany))

ECN-RX--01-062

Petten : ECN, September 2001. – 4 p.

Keywords: Autonomous wind turbine systems; Power performance evaluation; Electrical systems

Probability distribution of fatigue strength of rotor blades (profar) : publishable final report; [EU joule III project JOR3-CT98-0266]

Braam, H.; Heijdra, J.J. (ECN, Petten (Netherlands));

Delft, D.R.V. van; Leeuwen, H. van (Delft University of Technology, Delft (Netherlands)); Jorgensen, E. (RISØ Wind Energy Department, Roskilde (Denmark)); Lekou, D.; Vionis, P.S. (CRES, Attiki (Greece))

ECN-C--01-116

Petten : ECN, November 2001. – 20 p.

Keywords: Fatigue; Wind turbine blades; Reliability; Scatter

Processimulator voor windturbinebesturingen volume 1 : probleemanalyse

Engelen, T.G. van; Schaak, P.

ECN-C--01-112

Petten : ECN, November 2001. – 76 p.

Keywords: Processimulatie; Windturbine; Besturingssysteem; Testen; Offshore; Factory acceptance test (FAT)

Requirements for a wind turbine aerodynamics simulation module : version 1

Garrel, A. van

ECN-C--01-099

Petten : ECN, October 2001. – 9 p.

Keywords: Wind turbines; Simulation module

Scope and prospects of re-engineering and retrofitting windfarms in India

Rajsekhar, B.; Hulle, F.J.L. van

ECN-RX--01-057

Petten : ECN, September 2001. – 4 p.

Keywords: Wind farm development; Re-engineering of windfarms; India; Emission trading

Stall coefficients : aerodynamic airfoil coefficients at large angles of attack

Lindenburger, C.

ECN-RX--01-004

Petten : ECN, January 2001. – 18 p.

Keywords: Wind turbines; Airfoils; Aerodynamics; Rotors; Geometry; Drag; Mathematical models

Stall flag diagnostics of the Aerpac 43m rotor

Corten, G.P.

ECN-C--01-042

Petten : ECN, April 2001. – 12 p.

Keywords: Stall flag; Wind turbines; Vortex generator; Stall strip; Overpower; Rotors; Horizontal axis turbines; Wind; Velocity; Flow visualization; Image processing; Vortex flow; Capacity

Terrain concentration : a hypothesis for multiple power levels

Corten, G.P.

ECN-RX--01-003

Petten : ECN, January 2001. – 6 p.

Keywords: Wind turbines; Complex terrain; Wind; Availability; Velocity; Power

The maintenance manager : collecting and analysing maintenance data of wind turbines

Rademakers, L.W.M.M.; Braam, H.

ECN-C--01-012

Petten : ECN, January 2001. – 36 p.

Keywords: Wind turbines; Maintenance; Data analysis; Data acquisition; System failure analysis; Failures; Wind turbine arrays; Computer program documentation

The maintenance manager : user manual for the demonstration version

Rademakers, L.W.M.M.; Braam, H.

ECN-C--01-063

Petten : ECN, June 2001. – 43 p.

Keywords: Wind energy; Reliability; Maintenance; Availability

Theory and user manual BLADOPT

Bulder, B.H.; Barhorst, S.A.M.; Schepers, J.G. (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

ECN-C--01-011

Petten : ECN, September 2001. – 91 p.

Keywords: Wind turbine optimization; Theory and user manual

Tussenrapport aanbodvoorspeller duurzame energie

Brand, A.J.; Hegberg, T.; Borg, N.J.C.M. van der; Kok, J.K.; Selow, E.R. van; Kamphuis, I.G.;

Noord, M. de ; Sambeek, E.J.W. van

ECN-I--01-007

Petten : ECN, May 2001. – 80 p.

Keywords: Windenergie; Zonne-energie; Elektriciteitswet 1998; Korte-termijn productie prognose; Netherlands; Forecasting; Renewable energy sources; Energy supplies; Recommendations; Wind power; Solar energy; Feasibility studies; Technology assessment; Market; Economic impact; Systems analysis; Program management

Verification of European wind turbine design codes

Schepers, J.G.; Heijdra, J.J. (ECN, Petten (Netherlands));

Thomsen, K.; Larsen, T. (RISØ, Roskilde (Denmark)); Foussekis, D. (CRES, Attiki (Greece));

Rawlinson Smith, R. (Garrad Hassan, Bristol (United Kingdom)); Kraan, I.; Visser, B. (SPE, Amsterdam (Netherlands)); Oye, S. (DTU, Lyngby (Denmark)); Ganander, H.; Carlen, I. (Teknikgruppen AB, Sollentuna (Sweden)); Voutsinas, S.; Belessis, M. (Nat. Techn. University of Athens, Athens (Greece)); Drost, L. (Lagerwey, Barneveld (Netherlands))

ECN-RX--01-059

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Aeroelasticity; Fatigue; Models; Wind field simulation

Verslag workshop normontwikkeling windenergie : hamonisatie en differentiatie, 1 december 2000

Machielse, L.A.H.

ECN-C--01-025

Petten : ECN, March 2001. – 64 p.

Keywords: International standards; IEC; CENELEC; NEC 88; Acoustic noise; Lightning protection; Power performance; Power quality; Offshore; Wind turbines; Standardization; Noise pollution control; Lightning; Performance; Quality control; Certification; Meetings; Anemometers; Wind turbine arrays; Offshore sites; Onshore sites

Wind repowering in the Netherlands

Klunne, W.E.; Beurskens, H.J.M.; Westra, C.A.

ECN-RX--01-061

Petten : ECN, September 2001. – 2 p.

Keywords: Energy policies; Retrofitting; Stand alone systems; Wind farm

Wind, Tulips & Experts : ECN wind turbine test farm Wieringermeer

Lameris, F.

ECN-B--01-018

Petten : ECN, July 2001. – 10 p.

Keywords: Wind energy; Wieringermeer

2.8 ECN Solar Energy

20 veelgestelde vragen over zonne-energie

Sinke, W.C.; Kinderman, R.; Laas, L.J.

ECN-P--01-004

Petten : ECN, February 2001. – 7 p.

Keywords: Zonne-energie; Solar energy

A new low-cost modular inverter using advanced ASIC control : rigorous performance tests result in rapid adaptation to market demands

Heskes, P.J.M.; Eikelboom, J.A.; Rooij, P.M.; (ECN, Petten (Netherlands));

Bettenwort, G.; Margaritas, B. (Ascom Energy Systems, Soest (Germany)); Ortjohann, E. (Paderborn University, Soest (Germany))

ECN-RX--01-019

Petten : ECN, October 2001. – 4 p.

Keywords: Inverter; PV-systems

Advanced Crystalline Silicon Solar Cell Designs : ACE-Designs publishable report

Schönecker, A.; Eikelboom, D.W.K.; Manshanden, P.; Goris, M.J.A.A.; Wyers, G.P. (ECN, Petten (Netherlands));

Roberts, S.; Bruton, T. (BP Solar, Sunbury-on-Thames (United Kingdom)); Jooss, W.; Faika, K.; Kress, A.; Fath, P. (University of Konstanz, Konstanz (Germany)); Ferrazza, F. (Eurosolare EUS, Nettuno (Italy)); Kerschaver, E. van; Szulufcik, J. (Interuniversity Microelectronics Centre IMEC, Leuven (Belgium)); Leistiko, O.; Jorgensen, A. (Technical University of Denmark, MIC, Lyngby (Denmark)); Glunz, S.; Dicker, J.; Kray, D.; Sölter, J.; Schäfer, S. (Fraunhofer Institut für Energiesysteme ISE, Freiburg (Germany))

ECN-C--01-115

Petten : ECN, November 2001. – 26 p.

Keywords: Solar cells; Crystalline silicon; Back-contact; Advanced solar cell technology

Advanced reliability improvement of AC-modules (ARIA) : publishable report

Rooij, P.M. (ECN, Petten (Netherlands));

Real, M. (Alpha Real AG, Zürich (Switzerland)); Moschella, U. (ANIT, Genova (Italy)); Sample, T. (Joint Research Centre, Ispra (Italy)); Kardolus, M. (Mastervolt Solar BV, Amsterdam (Netherlands))

ECN-C--01-093

Petten : ECN, September 2001. – 61 p.

Keywords: PV-system

Building integration of photovoltaic power systems using amorphous silicon modules : irradiation loss due to non-conventional orientations

Borg, N.J.C.M. van der; Wiggelinkhuizen, E.J.

ECN-C--01-068

Petten : ECN, December 2001. – 40 p.

Keywords: Photovoltaic power systems; Monitoring; Modelling; Amorphous silicon; Facades; Building integration

Bulk and surface passivation by silicon nitride grown by microwave enhanced PECVD

Soppe, W.J.; Devilee, C.; Schiermeier, S.E.A.; Weeber, A.W. (ECN, Petten (Netherlands)); Hong, J.; Kessels, W.M.M.; Sanden, M.C.M. van de (Eindhoven University of Technology, Eindhoven (Netherlands)); Arnoldbik, W.M. (Debye Institute, Utrecht University, Utrecht (Netherlands))

ECN-RX--01-022

Petten : ECN, October 2001. – 4 p.

Keywords: Silicon nitride; PECVD

Comparison of emitters diffused using an IR belt furnace and a POCl₃ system

Goris, M.J.A.A.; Weeber, A.W. (ECN, Petten (Netherlands));

Jooss, W.; Huster, F. (University of Konstanz, Konstanz (Germany))

ECN-RX--01-017

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells

Conductive adhesives for interconnection of busbarless emitter wrap-through solar cells on a structured metal foil

Eikelboom, D.W.K.; Burgers, A.R.; Goris, M.J.A.A.; Manshanden, P.; Schönecker, A.; Wyers, G.P.

ECN-RX--01-016

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; Metal foil

Contact resistance scanning for process optimization : the Corescanner method

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

ECN-RX--01-047

Petten : ECN, August 2001. – 4 p.

Keywords: Corescanner; Solar cells

Contact resistances measured using the Corescanner : relations with cell processing

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

ECN-RX--01-018

Petten : ECN, October 2001. – 4 p.

Keywords: Corescan; Solar cells

Continuous SiN_x plasma processing using the inline MW RPECVD system

Weeber, A.W.; Soppe, W.J.

ECN-RX--01-024

Petten : ECN, October 2001. – 4 p.

Keywords: PECVD; Silicon-nitride

Effect of wafer thickness on the performance of mc-Si solar cells

Tool, C.J.J.; Burgers, A.R.; Manshanden, P.; Weeber, A.W. (ECN, Petten (Netherlands));

Straaten, B.H.M. van (Shell Solar Energy, Helmond (Netherlands))

ECN-RX--01-023

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; C-Si; Si wafer thickness

Error diagnosis and optimisation of cSi solar cell processing using contact resistances determined with the CoreScanner

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

ECN-RX--01-035

Petten : ECN, June 2001. – 2 p.

Keywords: Solar cells

Exploring the surface passivation of oxides on silicon by pulsed laser deposition

Moor, H.H.C. de; Doeswijk, L.M.

ECN-RX--01-015

Petten : ECN, October 2001. – 1 p.

Keywords:

First xSi cell results using selective emitters formed with diffusion barriers in one step

Kinderman, R.; Bultman, J.H.; Hoornstra, J.; Koppes, M.; Weeber, A.W.

ECN-RX--01-034

Petten : ECN, June 2001. – 2 p.

Keywords: Solar cells

Ideal single diffusion step selective emitters : a comparison between theory and practice

Bultman, J.H.; Burgers, A.R.; Hoornstra, J.; Kinderman, R.; Koppes, M.; Soppe, W.J.; Weeber, A.W.

ECN-RX--01-014

Petten : ECN, October 2001. – 6 p.

Keywords: Solar cells

Influence of wafer thickness on the performance of multicrystalline Si solar cells : an experimental study

Tool, C.J.J.; Burgers, A.R.; Manshanden, P.; Weeber, A.W. (ECN, Petten (Netherlands));

Straaten, B.H.M. (Shell Solar Energy, Helmond (Netherlands))

ECN-RX--01-041

Petten : ECN, October 2001. – 18 p.

Keywords: Photovoltaics; Wafer thickness; Lifetime; BSF; Multicrystalline silicon; PC1D modelling

Irradiation loss in the built environment

Borg, N.J.C.M. van der; Wiggelinkhuizen, E.J.

ECN-RX--01-013

Petten : ECN, October 2001. – 4 p.

Keywords: Built environment; PV-systems

Key technical and non-technical challenges for mass deployment of photovoltaic solar energy (PV)

Sinke, W.C.

ECN-RX--01-070

Petten : ECN, December 2001. – 5 p.

Keywords: Solar energy; PV

Korte termijn voorspelling van de opbrengst van PV-systemen

Borg, N.J.C.M. van der (ECN, Petten (Netherlands));
 Berg, W.D. van den Berg (Meteo Consult, Wageningen (Netherlands))
 ECN-C--01-128
 Petten : ECN, December 2001. – 17 p.

Keywords: Korte termijn prognose; PV-energie; Programmaverantwoordelijkheid; Elektriciteitswet

Life-cycle analysis and optimisation of solar home systems : interim report over 2000 of ENGINE project 74556

Nieuwenhout, F.D.J.; Martens, J.W.; Lasschuit, P.E.; Lafleur, M.C.C.; Cloin, J.
 ECN-C--01-057
 Petten : ECN, August 2001. – 78 p.

Keywords: Solar homes system; Rural electrification; Households

Long term stability of dye sensitized solar cells for large area power applications : LOTS-DSC publishable report

Kroon, J.M.; Hinsch, A.; Roosmalen, J.A.M. van; Burg, N.P.G. van der; Bakker, N.J.; Kinderman, R.; Sommeling, P.M.; Späth, M. (ECN, Petten (Netherlands));
 Kern, R.; Sastrawan, R.; Ferber, J.; Schubert, M.; Hasenhindl, G.; Schill, C.; Lorenz, M.; Stangl, R.; Baumgärtner, S.; Peter, C. (FMF, Freiburg (Germany)); Meyer, A.; Meyer, T. (Solaronix S.A., Aubonne (Switzerland)); Uhlendorf, I.; Holzbock, J.; Niepmann, R. (INAP, Gelsenkirchen (Germany))
 ECN-C--01-124
 Petten : ECN, November 2001. – 11 p.

Keywords: Solar cells

Long-term stability and efficiency of dye-sensitized solar cells

Kroon, J.M. (ECN, Petten (Netherlands));
 Hinsch, A.; Kern, R.; Sastrawan, R. (FMF, Freiburg (Germany)); Meyer, A. (Solaronix S.A., Aubonne (Switzerland)); Uhlendorf, I. (Institut für Angewandte Photovoltaik INAP, Gelsenkirchen (Germany))
 ECN-RX--01-020
 Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; Dye sensitisation

Long-term stability of dye-sensitised solar cells

Hinsch, A.; Kroon, J.M. (ECN, Petten (Netherlands));
 Kern, R.; Ferber, J. (FMF, Freiburg (Germany)); Uhlendorf, I.; Holzbock, J. (INAP, Gelsenkirchen (Germany)); Meyer, A. (Solaronix S.A., Aubonne (Switzerland))
 ECN-RX--01-069
 Petten : ECN, November 2001. – 14 p.

Keywords: Solar cells

Monitoring of solar home systems in China : first year results

Nieuwenhout, F.D.J.; Vervaart, M.R. (ECN, Petten (Netherlands));
 Rijt, P.J.N.M. van der (Shell Solar Energy, Helmond (Netherlands))
 ECN-RX--01-021
 Petten : ECN, October 2001. – 4 p.

Keywords: Solar home systems; Developing countries

Optical measurement on transparent sheets- and sandwich samples determining the optical properties $n()$ and $k ()$ from reflection and transmission measurements

Burgers, A.R.

ECN-R--01-001

Petten : ECN, February 2001. – 13 p.

Keywords: Optical properties; Sheets; Optical reflection; Light transmission; Refractive index; Absorption; Silicon solar cells; Wavelengths

PV Solar Home Systems in the CDM : streamlines procedures for solar home systems in the Clean Development Mechanism

Martens, J.W.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));

Kaufman, S. (Kaufman, Arlington MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

ECN-B--01-020

Petten : ECN, December 2001. – 4 p.

Keywords: PV solar home systems: Clean Development Mechanism (CDM)

PV on existing roofs : experiences of sixty households

Kaan, H.F.; Dijk, A.L. van; Leeuwen, M. van

ECN-RX--01-031

Petten : ECN, May 2001. – 14 p.

Keywords: PV; Roofs; Households; Houses; Design; Netherlands; Photovoltaic power supplies; Roofs; Households; Experiment planning; Construction; Reliability; Energy yield; Licensing regulations; Public opinion

Photovoltaic noise barrier at the A9-highway in the Netherlands : results of the monitoring programme

Borg, N.J.C.M. van der; Jansen, M.J.

ECN-C--01-021

Petten : ECN, February 2001. – 41 p.

Keywords: Netherlands; Photovoltaic power supplies; Roads; Noise pollution abatement; Inverters; Monitoring; Performance; Energy efficiency; AC losses

Regelgeving ten aanzien van cadmium in zonnepanelen : interpretatie en consequenties van Nederlandse en Europese regelgeving voor toepassing van cadmium in zonnepanelen en gebruik van zulke zonnepanelen

Wentink, C.H.M.; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J.; Lafleur, M.C.C.

ECN-I--01-010

Petten : ECN, July 2001. – 11 p.

Keywords: CdTe; CIGS; Dunne-film zonnecellen; Regelgeving; Cadmium; Nederland; Europese Unie

Shunt detection in solar cells with the Corescanner and lock-in thermography : a comparison

Heide, A.S.H. van der (ECN, Petten (Netherlands));

Breitenstein, O.; Rakotoniaina, J.P. (Max-Planck-Institut für Mikrostrukturphysik, Halle (Germany))

ECN-RX--01-048

Petten : ECN, August 2001. – 4 p.

Keywords: Solar cells; Corescanner

Sunlab Corescan

Bultman, J.H.; Hoornstra, J.

ECN-B--01-021

Petten : ECN, December 2001. – p.

Keywords:

Surface photovoltage spectroscopy (SPS) : a useful tool for the detection of charge carrier injection processes in extremely thin absorber (ETA) solar cells

Lenzmann, F.; O'Regan, B.C.; Wienke-Ullrich, J.A. (ECN, Petten (Netherlands));

Huisman, C.; Reijnen, L.; Goossens, A. (Laboratory for Applied Inorganic Chemistry, TU Delft, Delft (Netherlands)); Rühle, S.; Cahen, D. (Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot (Israel))

ECN-RX--01-046

Petten : ECN, July 2001. – 1 p.

Keywords: Solar cells

Technische monitoring van 80 PV-systemen te Apeldoorn

Borg, N.J.C.M. van der; Jansen, M.J.

ECN-C--01-010

Petten : ECN, February 2001. – 39 p.

Keywords: Houses; Netherlands; Photovoltaic power supplies; Performance; Monitoring; Systems analysis; Inverters; Energy efficiency; Reliability

Temperature dependence for the photovoltaic device parameters of polymer-fullerene solar cells under operating conditions

Kroon, J.M.; Wienk, M.M. (ECN, Petten (Netherlands));

Katz, E.A.; Faiman, D.; Tuladhar, S.M. (Ben Gurion University of the Negev, Sede Boquer Campus (Israel)); Fromherz, T.; Padinger, F. (QSEL, Linz (Austria)); Brabec, C.J.; Sariciftci, N.S. (LIOS, Linz (Austria))

ECN-RX--01-067

Petten : ECN, November 2001. – 8 p.

Keywords: Solar cells

Test facilities for certification of grid-connected PV systems : automated tests for grid connected PV inverters

Rooij, P.M.

ECN-C--01-095

Petten : ECN, November 2001. – 46 p.

Keywords: PV inverters; Certification; Test facilities

The hot string and the cool module : case study of fault detection in PV systems by means of IR photography

Eikelboom, J.A.; Borg, N.J.C.M. van der; Jansen, M.J.

ECN-I--01-017

Petten : ECN, October 2001. – 18 p.

Keywords: PV system; Infrared photography

Towards a streamlined CDM process for solar home systems

Martens, J.W.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));

Kaufman, S.L. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

ECN-RX--01-073

Petten : ECN, December 2001. – 4 p.

Keywords: Developing countries; Solar Home Systems; Clean Development Mechanism

Uitvoering van duurtesten van een op een bakfiets gemonteerde koelkast op zonne-energie

Westra, C.A.; Muis, R.P.; Wiggelinkhuizen, E.J.

ECN-C--01-064

Petten : ECN, June 2001. – 23 p.

Keywords: Zonne-energie; Koelkast; Bakfiets; Duurtest

Veelgestelde vragen over fotovoltaïsche zonne-energie

Sinke, W.C.

ECN-P--01-011

Petten : ECN, October 2001. – 13 p.

Keywords: Zonne-energie

Wij hebben iets te vieren

Sinke, W.C.

ECN-B--01-007

Petten : ECN, January 2001. – p.

Keywords:

2.9 ECN Renewable Energy in the Built Environment

3e IBPSA-NVL conferentie 'Beter ontwerp door gebouw prestatie simulaties' : conferentie presentaties

Römer, J.C. (ECN, Petten (Netherlands));

Hensen J. (TU, Eindhoven (Netherlands)) (ed.); Plokker, W. (TNO Bouw, Delft (Netherlands)) (ed.)

ECN-P--01-013

Petten : ECN, December 2001. – 208 p.

Keywords: Gebouw prestatie; Simulatiemodellen; Energiebesparing; Software

Building low cost low energy houses in Lithuania : not that difficult

Kaan, H.F.

ECN-RX--01-028

Petten : ECN, May 2001. – 7 p.

Keywords: Energy houses; Buildings; Lithuania; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

Computerised intelligence in small scale home networks and beyond : opportunities for energy efficiency

Warmer, C.J.; Kamphuis, I.G.

ECN-I--01-005

Petten : ECN, November 2001. – 92 p.

Keywords: Home automation; Intelligent networks; Distributed systems; Energy management; Comfort management

Deliverable D6 : software architecture requirements for powerline communication as a last mile local access

Kamphuis, I.G.; Warmer, C.J.

ECN-C--01-006

Petten : ECN, February 2001. – 57 p.

Keywords: Software architecture; PALAS; European Union

Deliverable D9 : market survey of last-mile communication services using PLC. PALAS - Powerline as an Alternative Local Access IST-1999-11379

Kamphuis, I.G.

ECN-C--01-092

Petten : ECN, June 2001. – 55 p.

Keywords: PALAS; Power line communications; Energy near services; Energy management; Last-mile access; Home automation; Residential customers

Development and applications for PV thermal

Zondag, H.A.; Jong, M.J.M.; Helden, W.G.J. van

ECN-RX--01-025

Petten : ECN, October 2001. – 6 p.

Keywords: PV thermal collector

Duurzame energie in Lopik : praktisch potentieel voor duurzame energie

Dijk, A.L. van; Ligthart, F.A.T.M.; Westra, C.A. (ECN, Petten (Netherlands));
Dekkers, J. (WEOM, Veenendaal (Netherlands))

ECN-C--01-091

Petten : ECN, September 2001. – 50 p.

Keywords: Lopik; Duurzame energie; DE-scan; Energiebesparing; Instrumenten

Eerste experimenten met hybride ventilatiesysteem in energiezuinige ECN testwoning

Römer, J.C.; Schuitema, R.

ECN-RX--01-074

Petten : ECN, June 2001. – 5 p.

Keywords: Hybride ventilatiesysteem; Energiebesparing

Energieadvies Aannemingsbedrijf Reek B.V. : koele lucht uit de bodem

Koene, F.G.H.; Ligthart, F.A.T.M.

ECN-C--01-062

Petten : ECN, July 2001. – 27 p.

Keywords: Bodemkoeling; Ventilatielucht

Energieconcept Hogeschool Haarlem : een duurzaam voorbeeld doet goed volgen

Koene, F.G.H.; Ligthart, F.A.T.M.

ECN-C--01-043

Petten : ECN, May 2001. – 28 p.

Keywords: Energieconcept; Hogeschool Haarlem; School buildings; Energy efficiency; Netherlands; Energy conservation; Renewable energy sources; Feasibility studies; Design; Thermal insulation; Ventilation; Space heating; Water heating; Lighting systems; Energy management

Energieconcept woontoren Rijswijkseplein : hoog potentieel voor energiebesparing

Koene, F.G.H.; Ligthart, F.A.T.M.; Kaan, H.F. (ECN, Petten (Netherlands));

Donze, G.J.; Mak, J.P. (W/E adviseurs, Gouda (Netherlands))

ECN-C--01-049

Petten : ECN, July 2001. – 20 p.

Keywords: Ceres; Woontoren Rijswijkseplein; Energieconcept; Zonnegevel

Energieprogramma voor bedrijventerrein Boekelermeer Zuid 2, Alkmaar

Ligthart, F.A.T.M.; Kester, J.C.P.

ECN-C--02-002

Petten : ECN, November 2001. – 37 p.

Keywords: Boekelermeer; Alkmaar; Huisvuilcentrale; Warmtenet; Windenergie; CO2-reductie; Duurzaam bedrijventerrein

Energievisie Nieuw Den Helder Centrum : kansen voor energiebesparing en duurzame energie bij de herstructurering

Kester, J.C.P.; Sjoerdsma, E.

ECN-C--01-108

Petten : ECN, November 2001. – 58 p.

Keywords: Energievisies; Energiebesparing; Duurzame energie; Herstructurering; Nieuwbouw; Bestaande bouw; Energie-infrastructuur

Evaluatie kosten en prestatie praktijkexperiment : bedrijfskantoor Trend Cosmetics B.V. te Nibbixwoud

Bakker, E.J.; Helden, W.G.J. van

ECN-C--01-086

Petten : ECN, September 2001. – 43 p.

Keywords: Energiepalen; Warmtepomp; Directe koeling; TRNSYS; Nieuwbouw; Utiliteitsgebouw; CO2 reductie; Evaluatie

Gebruik van simulatie-tools bij de integratie van energiebesparende componenten in gebouwen in de huidige ontwerppraktijk : rapportage case-studies

Wilde, P.J.C.J. de

ECN-C--01-051

Petten : ECN, May 2001. – 49 p.

Keywords: Office buildings; Energy efficiency; Netherlands; Construction; Design; Computerized simulation; Energy conservation; Decision making; Data acquisition; Data analysis; Comparative evaluations; Architecture

Gebruik van simulatie-tools bij de integratie van energiebesparende componenten in gebouwen in de huidige ontwerppraktijk : rapportage enquêtes

Wilde, P.J.C.J. de

ECN-C--01-060

Petten : ECN, June 2001. – 64 p.

Keywords: Gebouwde omgeving; Praktijk; Ontwerpproces; Rekenprogramma's; Energiebesparende componenten; Enquête; Office buildings; Energy efficiency; Netherlands; Construction; Design; Computerized simulation; Energy conservation; Decision making; Data acquisition; Data analysis; Comparative evaluations; Architecture

Haalbaarheidsstudie energiebesparende maatregelen voor basisschool De Sokkerwei, Castrium : nulenergie haalbaar en betaalbaar

Lafleur, M.C.C.; Sjoerdsma, E.; Sijpheer, N.C.

ECN-C--00-065

Petten : ECN, January 2001. – 52 p.

Keywords: Duurzame energie; Schoolgebouw; Installatieconcept

Het duurzame hoofdkantoor van de Hoogevest Groep (PG 019) : onderzoek naar toepassing duurzame energie-opties, subsidies en fiscale regelgeving

Jong, M.J.M.; Ligthart, F.A.T.M. (ECN, Petten (Netherlands));

Versteeg, A.J. (Profin Sustainable Energy Solutions, Amersfoort (Netherlands))

ECN-C--01-089

Petten : ECN, September 2001. – 51 p.

Keywords: Duurzame energie; Van Hoogevest Groep; Amersfoort; Duurzaam bouwen; Kozijnen; Zonwering; Warmteterugwinning; Daglichttoetreding; Natuurlijke ventilatie; Vegetatiedak; Warmtepompen

Housing construction in Beijing, Tianjin and Shanghai : a great leap forward in energy awareness

Kaan, H.F.

ECN-RX--01-030

Petten : ECN, May 2001. – 10 p.

Keywords: China; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

Inventarisatie van sensoren voor de bepaling van de binnenluchtkwaliteit

Wilde, H.P.J. de; Cnubben, P.A.J.P.; Bakker, F.P.; Römer, J.C. (ECN, Petten (Netherlands));

Jong, P. de (NRG, Arnhem (Netherlands))

ECN-C--01-046

Petten : ECN, October 2001. – 58 p.

Keywords: Binnenluchtkwaliteit; Energiezuinige gebouwen; Luchtkwaliteitsensoren; Sensorgesteuurde ventilatiesystemen; Energiebesparing

Medium-term solar heat storage in a water filled bag tank

Visscher, K.

ECN-RX--01-037

Petten : ECN, June 2001. – 13 p.

Keywords: Solar heat storage

Nulemissie woning 'De Edele Steen' : de woning als zonnecollector

Sijpheer, N.C.; Strootman, K.J.

ECN-C--01-013

Petten : ECN, May 2001. – 50 p.

Keywords: Anna Paulowna; Nul-emissie; Houses; Energy efficiency; Solar collectors; Feasibility studies; Design; Energy consumption; Space heating; Water heating; Carbon dioxide; Emission; Solar water heaters; Thermal insulation; Cost; Heat pumps; Netherlands

PV Mobi : PV modules optimised for building integration

Boer, B.J. de; Helden, W.G.J. van

ECN-RX--01-032

Petten : ECN, May 2001. – 13 p.

Keywords: PV; PV modules; Building integrations; Photovoltaic power supplies; Buildings; Performance testing; Energy yield; Design; Computerized simulation; Heating; Cooling

PV on existing roofs : experiences of sixty households

Kaan, H.F.; Dijk, A.L. van; Leeuwen, M. van

ECN-RX--01-031

Petten : ECN, May 2001. – 14 p.

Keywords: PV; Roofs; Households; Houses; Design; Netherlands; Photovoltaic power supplies; Roofs; Households; Experiment planning; Construction; Reliability; Energy yield; Licensing regulations; Public opinion

Regelgeving ten aanzien van cadmium in zonnepanelen : interpretatie en consequenties van Nederlandse en Europese regelgeving voor toepassing van cadmium in zonnepanelen en gebruik van zulke zonnepanelen

Wentink, C.H.M.; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J.; Lafleur, M.C.C.
ECN-I--01-010

Petten : ECN, July 2001. – 11 p.

Keywords: CdTe; CIGS; Dunne-film zonnecellen; Regelgeving; Cadmium; Nederland; Europese Unie

Richtlijn voor energiebesparing in de ICT-branche : Mb versus Mwh

Kester, J.C.P.; Ligthart, F.A.T.M.; Sijpheer, N.C.
ECN-C--01-066

Petten : ECN, June 2001. – 29 p.

Keywords: Energieconcepten; ICT; Energiegebruik; Datahotel; Telecomswitch; Koeling; Koelenergie

Scenariostudie voor een optimale energie-infrastructuur in deelgebied 4 bedrijventerrein Cornelis Douwes, Amsterdam-Noord

Lafleur, M.C.C.; Ligthart, F.A.T.M.; Sijpheer, N.C.
ECN-C--01-016

Petten : ECN, February 2001. – 48 p.

Keywords: Netherlands; Urban areas; Energy efficiency; Energy policy; Local government; Buildings; Energy consumption; Energy conservation; Small businesses; Payback period; Investment; Energy demand; Design; Architecture; Forecasting

Stralingsbranders in de Grote Sint Laurenskerk in Alkmaar : hoe gaan gebruik en behoud van de kerk samen

Koene, F.G.H.; Ligthart, F.A.T.M. (ECN, Petten (Netherlands));
Schellen, H.L. (Technical University, Eindhoven (Netherlands)); Jutte, B.A.H.G.; Kragt, W. (Instituut Collectie Nederland ICN, Amsterdam (Netherlands)); Stappers, M.H.L. (Rijksdienst voor de Monumentenzorg, Zeist (Netherlands))
ECN-C--01-125

Petten : ECN, December 2001. – 47 p.

Keywords: Grote Sint Laurenskerk Alkmaar; Vloerverwarming; Stralingsbranders; Optimale regeling; Condensatiegevaar

System studies on combined PV thermal panels

Jong, M.J.M.
ECN-RX--01-027

Petten : ECN, May 2001. – 9 p.

Keywords: PV; Thermal panels

System studies on combined PV thermal panels

Jong, M.J.M.; Zondag, H.A.
ECN-RX--01-026

Petten : ECN, May 2001. – 12 p.

Keywords: Solar energy; PV panels

Towards an energy performance standard for the building stock in Lithuania

Kaan, H.F.

ECN-RX--01-029

Petten : ECN, May 2001. – 6 p.

Keywords: Lithuania; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

Tussenrapport aanbodvoorspeller duurzame energie

Brand, A.J.; Hegberg, T.; Borg, N.J.C.M. van der; Kok, J.K.; Selow, E.R. van; Kamphuis, I.G.;

Noord, M. de ; Sambeek, E.J.W. van

ECN-I--01-007

Petten : ECN, May 2001. – 80 p.

Keywords: Windenergie; Zonne-energie; Elektriciteitswet 1998; Korte-termijn productie prognose; Netherlands; Forecasting; Renewable energy sources; Energy supplies; Recommendations; Wind power; Solar energy; Feasibility studies; Technology assessment; Market; Economic impact; Systems analysis; Program management

Verwarmingsconcepten PZE woning : weinig Joules met weinig installatie

Koene, F.G.H.; Jong, M.J.M.; Kaan, H.F.

ECN-C--00-097

Petten : ECN, July 2001. – 39 p.

Keywords: PZE-woning; Passieve zonne-energie; Verwarmingsconcepten

3. ECN PUBLICATIONS BY DOCUMENT TYPE

(sorted out by publication number)

3.1 C-Publications

ECN-C--00-065

Lafleur, M.C.C.; Sjoerdsma, E.; Sijpheer, N.C.

Haalbaarheidsstudie energiebesparende maatregelen voor basisschool De Sokkerwei, Castricum : nulenergie haalbaar en betaalbaar

Petten : ECN, January 2001. – 52 p.

Keywords: Duurzame energie; Schoolgebouw; Installatieconcept

ECN-C--00-077

Lindenburg, C.; Bot, E.T.G.; Hendriks, H.B.

NM3000-LMH46-5 blade design : aerodynamic parameter sensitivity study

Petten : ECN, May 2001. – 58 p.

Keywords: Aerodynamic optimisation; Cost of Energy; Dynamic loads; PHATAS program; Price performance ratio; Sensitivity analysis; Wind turbine

ECN-C--00-097

Koene, F.G.H.; Jong, M.J.M.; Kaan, H.F.

Verwarmingsconcepten PZE woning : weinig Joules met weinig installatie

Petten : ECN, July 2001. – 39 p.

Keywords: PZE-woning; Passieve zonne-energie; Verwarmingsconcepten

ECN-C--00-117

Vermeulen, A.T.

Verkennd onderzoek modernisering VLW

Petten : ECN, February 2001. – 15 p.

Keywords: Verkeersemisies; Dispersie; Luchtverontreiniging; Modellering; Trace-ontwerp; Gaussisch pluimmodel

ECN-C--01-001

Jeeninga, H.; Beeldman, M.; Boonekamp, P.G.M.

EPA woningen : nadere invulling van de EPA doelstelling voor woningen

Petten : ECN, January 2001. – 51 p.

Keywords: Netherlands; Energy efficiency standards; Energy audits; Houses; Carbon dioxide; Emission; Environmental policy; Energy conservation

ECN-C--01-002

Jeeninga, H.; Boots, M.G.

Ontwikkeling van het huishoudelijk energieverbruik in een geliberaliseerde energiemarkt : effecten op aankoop- en gebruiksgedrag

Petten : ECN, January 2001. – 37 p.

Keywords: Households; Energy consumption; Netherlands; Sales; Prices; Economic elasticity; Energy demand; Appliances

ECN-C--01-004

Lange, T.J. de; Beeldman, M.; Kiel, J.H.A.; Uil, H. den; Veenkamp, J.M.

Co-production of fuels as an option for Demkolec? : a preliminary review of opportunities for the co-production of liquid or gaseous energy carriers

Petten : ECN, March 2001. – 69 p.

Keywords: Energy carriers; Coal gasification

ECN-C--01-005

Raad, A. de; Wees, M.T. van

Baseline study and monitoring plan : gasfired co-generation at the Bratislava 1 heating plant. AIJ project PSO99/SK/2/1

Petten : ECN, April 2001. – 52 p.

Keywords: Monitoring; Cogeneration; Dual-purpose power plants; Slovakia; Greenhouse gases; Emission; Program management; Efficiency; Retrofitting; Decommissioning; Heat; Electric power; Air pollution abatement; Power demand; Energy demand; Data compilation; Data processing

ECN-C--01-006

Kamphuis, I.G.; Warmer, C.J.

Deliverable D6 : software architecture requirements for powerline communication as a last mile local access

Petten : ECN, February 2001. – 57 p.

Keywords: Software architecture; PALAS; European Union

ECN-C--01-007

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkers, C.H.; Ybema, J.R.

The multi-sector convergence approach : a flexible framework for negotiating global rules for national greenhouse gas emissions mitigation targets

Petten : ECN, April 2001. – 35 p.

Keywords: Sectoral analysis; Planning; Cost estimation; Comparative evaluations; Emission; Mitigation; Air pollution abatement; Simulation; International agreements; Trade; Implementation; Greenhouse gases; Developed countries; Developing countries; Negotiation

ECN-C--01-008

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkers, C.H.; Ybema, J.R.

The multi-sector convergence approach of burden sharing : an analysis of its cost implication

Petten : ECN, March 2001. – 25 p.

Keywords: Sectoral analysis; Planning; Cost estimation; Comparative evaluations; Emission; Mitigation; Air pollution abatement; Simulation; International agreements; Trade; Implementation; Greenhouse gases; Developed countries; Developing countries; Negotiation

ECN-C--01-009

Jansen, J.C.; Battjes, J.J.; Sijm, J.P.M.; Volkers, C.H.; Ybema, J.R.; Ormel, F.; (ECN, Petten (Netherlands));

Torvanger, A.; Ringeus, L.; Underdal, A. (CICERO, Oslo (Norway))

Sharing the burden of greenhouse gas mitigation

Petten : ECN, May 2001. – 58 p.

Keywords: Greenhouse gases

ECN-C--01-010

Borg, N.J.C.M. van der; Jansen, M.J.

Technische monitoring van 80 PV-systemen te Apeldoorn

Petten : ECN, February 2001. – 39 p.

Keywords: Houses; Netherlands; Photovoltaic power supplies; Performance; Monitoring; Systems analysis; Inverters; Energy efficiency; Reliability

ECN-C--01-011

Bulder, B.H.; Barhorst, S.A.M.; Schepers, J.G. (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

Theory and user manual BLADOPT

Petten : ECN, September 2001. – 91 p.

Keywords: Wind turbine optimization; Theory and user manual

ECN-C--01-012

Rademakers, L.W.M.M.; Braam, H.

The maintenance manager : collecting and analysing maintenance data of wind turbines

Petten : ECN, January 2001. – 36 p.

Keywords: Wind turbines; Maintenance; Data analysis; Data acquisition; System failure analysis; Failures; Wind turbine arrays; Computer program documentation

ECN-C--01-013

Sijpheer, N.C.; Strootman, K.J.

Nulemissie woning 'De Edele Steen' : de woning als zonnecollector

Petten : ECN, May 2001. – 50 p.

Keywords: Anna Paulowna; Nul-emissie; Houses; Energy efficiency; Solar collectors; Feasibility studies; Design; Energy consumption; Space heating; Water heating; Carbon dioxide; Emission; Solar water heaters; Thermal insulation; Cost; Heat pumps; Netherlands

ECN-C--01-014

Sloot, H.A. van der; Hoede, D.; Rietra, R.P.J.J.

Leaching behaviour of artificial aggregates : EU project BRST-CT98-5234

Petten : ECN, December 2001. – 190 p.

Keywords: Leaching; Aggregates; Modelling; Long term behaviour; Trace elements

ECN-C--01-015

Verhoef, J.P.; Leendertse, G.P.

Identification of variables for site calibration and power curve assessment in complex terrain JOR-CT98-0257 : task 8, a literature survey on theory and practice of parameter identification, specification and estimation (ISE) techniques

Petten : ECN, April 2001. – 23 p.

Keywords: Identification; Specification and estimation techniques; ISE-techniques; Data analysis; Wind energy; Site evaluation

ECN-C--01-016

Lafleur, M.C.C.; Ligthart, F.A.T.M.; Sijppeer, N.C.

Scenariostudie voor een optimale energie-infrastructuur in deelgebied 4 bedrijventerrein Cornelis Douwes, Amsterdam-Noord

Petten : ECN, February 2001. – 48 p.

Keywords: Netherlands; Urban areas; Energy efficiency; Energy policy; Local government; Buildings; Energy consumption; Energy conservation; Small businesses; Payback period; Investment; Energy demand; Design; Architecture; Forecasting

ECN-C--01-017

Kram, T.

The MATTER project : integrated energy and materials systems engineering for GHG emission mitigation

Petten : ECN, April 2001. – 179 p.

Keywords: MATTER model; Energy consumption

ECN-C--01-018

Uyterlinde, M.A.; Arkel, W.G. van; Burger, H.; Dril, A.W.N. van; Jeeninga, H.; Kroon, P.

Monitoring energy efficiency indicators in The Netherlands in 2000 : Dutch contribution to the project 'Cross country comparison on energy efficiency - Phase 6'

Petten : ECN, April 2001. – 73 p.

Keywords: Energy efficiency; Netherlands; Comparative evaluations; Reviews; Data analysis; Environmental policy; Sectoral analysis; Service sector; Households; Energy demand; Energy consumption; Energy expenses; Economic development; Energy conservation; Industry; Transportation sector; Residential sector; Electricity; Data compilation

ECN-C--01-019

Reijers, H.T.J.; Groot, A. de; Lako, P.

Evaluatie van waterstof-gebaseerde concepten en systemen : rapport fase 1

Petten : ECN, April 2001. – 142 p.

Keywords: Concept; System; Waterstoftechnologie; Keten; NOx reductie; CO2 reductie; Duurzame energie; Infrastructuur; Actor; Waterstofproductie; Waterstofopslag; Waterstoftransport; Waterstofgebruik; Hydrogen technology; Chain; NOx reduction; CO2 reduction; Renewable energy; Infra structure; Hydrogen production; Hydrogen storage; Hydrogen transport; Hydrogen use

ECN-C--01-021

Borg, N.J.C.M. van der; Jansen, M.J.

Photovoltaic noise barrier at the A9-highway in the Netherlands : results of the monitoring programme

Petten : ECN, February 2001. – 41 p.

Keywords: Netherlands; Photovoltaic power supplies; Roads; Noise pollution abatement; Inverters; Monitoring; Performance; Energy efficiency; AC losses

ECN-C--01-022

Boonekamp, P.G.M.; Dril, A.W.N. van; Feber, M.A.P.C. de; Spoelstra, S.

Techniekontwikkeling in een veranderde energievoorziening : herbezinning op de Nederlandse R&D-aanpak

Petten : ECN, February 2001. – 41 p.

Keywords: Netherlands; Research programs; Demonstration programs; Energy policy; Technology assessment; Financial incentives; Implementation; Market

ECN-C--01-023

Groot, A.T.J.

Het Nederlandse fijn stof beleid en de effecten van verkeersmaatregelen : de omgang van overheden met fijn stof problematiek, de bijdrage van verkeer en het beleid dat overheden in deze voeren
 Petten : ECN, January 2001. – 34 p.

Keywords: Road transport; Environmental policy; Local government; Emission; Dusts; Particulates; Particle size; Pollution sources; Air quality; Pollution regulations; Netherlands; Public opinion

ECN-C--01-024

Schie, R.G. van

De axiale-fluxgenerator van Octopus Wind Technology : een haalbaarheidsstudie
 Petten : ECN, February 2001. – 74 p.

Keywords: Feasibility studies; Flux pumps; Electric generators; Wind turbines; Rotors; Magnetic flux; Permanent magnets; Bearings; Hydrostatic bearings; Magnetic bearings

ECN-C--01-025

Machielse, L.A.H.

Verslag workshop normontwikkeling windenergie : hamonisatie en differentiatie, 1 december 2000

Petten : ECN, March 2001. – 64 p.

Keywords: International standards; IEC; CENELEC; NEC 88; Acoustic noise; Lightning protection; Power performance; Power quality; Offshore; Wind turbines; Standardization; Noise pollution control; Lightning; Performance; Quality control; Certification; Meetings; Anemometers; Wind turbine arrays; Offshore sites; Onshore sites

ECN-C--01-026

Jansen, J.C.; Boots, M.G.; Heuij, H.J.F.P. van den; Linden, N.H. van der; Sambeek, E.J.W. van; Wals, A.F.

Energy policy framework developments in industrialised countries : some observations on the relevancy for China

Petten : ECN, March 2001. – 48 p.

Keywords: Energy policy; Industrialised countries; China; Liberalisation; Coal subsector; Gas subsector; Renewable energy sources; Energy policy; Energy; Institutional factors; Electric power; Natural gas; Petroleum; European Union; Deregulation; Pricing regulations; Contract management; Implementation; Market

ECN-C--01-027

Sloot, H.A. van der; Rietra, R.P.J.J. (ECN, Petten (Netherlands));

Mulder, E.; Hage, J.L.T.; Brouwer, J.P. (TNO-MEP, Apeldoorn (Netherlands))

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Skytte, K.; Nielsen, L.H. (RISØ, Roskilde (Denmark)); Leonardi, M. (SERVEN, Milano (Italy));

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ECN-C--01-031

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Keywords: Wind energy; Reliability; Maintenance; Availability**ECN-C--01-064**

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Keywords: CO₂ reduction; Emission trade; Simulation models; Energy consumption; Netherlands

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Petten : ECN, August 2001. – 32 p.

Keywords: Sub-stoichiometric combustion; Partial oxidation gas turbine; Recuperated gas turbine; Reheat gas turbine; Dairy industry; Exergy analysis; Syngas production; Spary dryer; Methanol production; Air bottoming cycle; Bakery furnace

ECN-C--01-076

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Keywords: Aerodynamische coefficienten; Windturbinebladen**ECN-C--01-078**

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Keywords: Wind turbines; Wind energy; Offshore; Standards**ECN-C--01-079**

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Keywords: Wind turbine concepts**ECN-C--01-080**

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Keywords: Performance testing; Seal**ECN-C--01-083**

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Keywords: Klimaatbeleid; Climate policy

ECN-C--01-084

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ECN-C--01-086

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ECN-C--01-087

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Petten : ECN, August 2001. – 43 p.

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Keywords: Human resource management; Energy management; Energy programme; Energy planning; Electricity supply; Grid connection; Implementation of wind energy manufacturing; Installation and monitoring; Operating experiences; Pre-investment studies; Project management; Standards and certificates; Technology assessment; Training course; Wind electric battery chargers; Wind energy; Wind pumps; Wind farm design; Wind resources; Capacity building

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Keywords: Duurzame energie; Van Hoogevest Groep; Amersfoort; Duurzaam bouwen; Kozijnen; Zonwering; Warmteterugwinning; Daglichttoetreding; Natuurlijke ventilatie; Vegetatiedak; Warmtepompen

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Keywords: PALAS; Power line communications; Energy near services; Energy management; Last-mile access; Home automation; Residential customers

ECN-C--01-093

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Advanced reliability improvement of AC-modules (ARIA) : publishable report

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Keywords: PV-system

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Petten : ECN, September 2001. – 33 p.

Keywords: Coal fly ash; Leaching

ECN-C--01-095

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Petten : ECN, November 2001. – 46 p.

Keywords: PV inverters; Certification; Test facilities

ECN-C--01-097

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Petten : ECN, December 2001. – 34 p.

Keywords: Fossil fuels; Hydrogen; PEMFC; Syngas

ECN-C--01-098

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Kaufman, S. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

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Petten : ECN, December 2001. – 59 p.

Keywords: Clean Development Mechanism (CDM); Solar home systems

ECN-C--01-099

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Petten : ECN, October 2001. – 9 p.

Keywords: Wind turbines; Simulation module

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Keywords: Energy policy; China

ECN-C--01-102

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Keywords: Cup anemometer; Performance measurements; Power curve; Turbulence intensity

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Petten : ECN, December 2001. – 90 p.

Keywords: Energiebesparing; Energiebeleid

ECN-C--01-106

Menkveld, M.

Verificatie CO2-meter voor de Stichting FACE

Petten : ECN, November 2001. – 20 p.

Keywords: CO2 emissions

ECN-C--01-107

Rabou, L.P.L.M.; Doorn, J. van; Drift, A. van der

Phyllis fase 5 : implementatie van een classificatie macro en onderhoud/uitbreiding

Petten : ECN, December 2001. – 15 p.

Keywords: Biomassa; Classificatie; Verbrandingswaarde

ECN-C--01-108

Kester, J.C.P.; Sjoerdsma, E.

Energievisie Nieuw Den Helder Centrum : kansen voor energiebesparing en duurzame energie bij de herstructurering

Petten : ECN, November 2001. – 58 p.

Keywords: Energievisies; Energiebesparing; Duurzame energie; Herstructurering; Nieuwbouw; Bestaande bouw; Energie-infrastructuur

ECN-C--01-109

Bruggink, J.J.C. (ECN, Petten (Netherlands));

Zwaan, B.C.C. van der (IVM, Amsterdam (Netherlands))

The role of nuclear energy in establishing sustainable energy paths

Petten : ECN, November 2001. – 42 p.

Keywords: Energy supply

ECN-C--01-110

Boerrigter, H. ; Bodenstaff, H.; Geusebroek, M.; Kuipers, J.; Oudhuis, A.B.J.; Wilberink, R.W.A.

Implementation of thermal processes for feedstock recycling of bromine, with energy recovery, from plastics waste of electrical and electronic equipment (WEEE). Phase 2: production of bromine salt in staged-gasification to determine technical feasibility of bromine recovery

Petten : ECN, October 2001. – 31 p.

Keywords: EBFRIIP; WEEEEE; BFR; Bromine; Chlorine; Antimony; Energy recovery; Thermal processes; Staged-gasification; Gasification; Pyrolysis

ECN-C--01-112

Engelen, T.G. van; Schaak, P.

Processimulator voor windturbinebesturingen volume 1 : probleemanalyse

Petten : ECN, November 2001. – 76 p.

Keywords: Processimulatie; Windturbine; Besturingssysteem; Testen; Offshore; Factory acceptance test (FAT)

ECN-C--01-115

Schönecker, A.; Eikelboom, D.W.K.; Manshanden, P.; Goris, M.J.A.A.; Wyers, G.P. (ECN, Petten (Netherlands));

Roberts, S.; Bruton, T. (BP Solar, Sunbury-on-Thames (United Kingdom)); Jooss, W.; Faika, K.; Kress, A.; Fath, P. (University of Konstanz, Konstanz (Germany)); Ferrazza, F. (Eurosolare EUS, Nettuno (Italy)); Kerschaver, E. van; Szulufcik, J. (Interuniversity Microelectronics Centre IMEC, Leuven (Belgium)); Leistiko, O.; Jorgensen, A. (Technical University of Denmark, MIC, Lyngby (Denmark)); Glunz, S.; Dicker, J.; Kray, D.; Sölter, J.; Schäfer, S. (Fraunhofer Institut für Energiesysteme ISE, Freiburg (Germany))

Advanced Crystalline Silicon Solar Cell Designs : ACE-Designs publishable report

Petten : ECN, November 2001. – 26 p.

Keywords: Solar cells; Crystalline silicon; Back-contact; Advanced solar cell technology

ECN-C--01-116

Braam, H.; Heijdra, J.J. (ECN, Petten (Netherlands));
Delft, D.R.V. van; Leeuwen, H. van (Delft University of Technology, Delft (Netherlands)); Jorgensen, E. (RISØ Wind Energy Department, Roskilde (Denmark)); Lekou, D.; Vionis, P.S. (CRES, Attiki (Greece))

Probability distribution of fatigue strength of rotor blades (profar) : publishable final report; [EU joule III project JOR3-CT98-0266]

Petten : ECN, November 2001. – 20 p.

Keywords: Fatigue; Wind turbine blades; Reliability; Scatter

ECN-C--01-118

Meijden, C.M. van der; Neeft, J.P.A. (ECN, Petten (Netherlands));
Ploeg, F.B. van der

Roterende Deeltjes Scheider (RDS) voor reiniging van biomassa stookgassen

Petten : ECN, September 2001. – 28 p.

Keywords: Biomassa; Vergassing; Gasreiniging; Teer; RDS; RPS

ECN-C--01-119

Boersma, A.R.; Hemmes, K.

Inzet geavanceerde ECN Biomassa-conversietechnologieën voor Nederlandse VGI reststromen : eindrapport NECST-project 249.402-0260

Petten : ECN, December 2001. – 46 p.

Keywords: Voedingsmiddelenindustrie; VGI; Organische reststromen; Conversietechnieken; Biomassa; Afval; Energie

ECN-C--01-120

Martens, J.W. (ECN, Petten (Netherlands));
Kaufman, S. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

Guidelines for validation, monitoring and verification of solar home systems under the Clean Development Mechanism

Petten : ECN, December 2001. – 16 p.

Keywords: CDM; Solar Home Systems; Baseline, UNFCCC, SHS, Guidelines

ECN-C--01-121

Comans, R.N.J. ; Roskam, G.; Oosterhoff, A.; Shor, L. (ECN, Petten (Netherlands));
Wahlstrom, M.; Laine-Ylijoki, J.; Pihlajaniemi, M.; Ojala, M. (VTT, Espoo (Finland)); Broholm, K.; Villholth, K.; Hjelmar, O. (DHI, Horsholm (Denmark)); Heimovaara, T.; Keijzer, J.; Keijzer, H. (IWACO, Rotterdam (Netherlands))

Development of standard leaching tests for organic pollutants in soils, sediments and granular waste materials : final report

Petten : ECN, December 2001. – 179 p.

Keywords: Standard leaching tests; Organic pollutants; Soils; Granular; Waste materials

ECN-C--01-122

Martens, J.W.; Rooijen, S.N.M. van (ECN, Petten (Netherlands));
Wijnants, H.J. (DHV, Amersfoort (Netherlands)); Bovée, V. (EcoSecurities, Oxford (United Kingdom))

Standardised baselines for small-scale CDM activities : a proposal for the CDM Programme of the Netherlands. Discussion paper

Petten : ECN, December 2001. – 98 p.

Keywords: Clean Development Mechanism (CDM)

ECN-C--01-124

Kroon, J.M.; Hinsch, A.; Roosmalen, J.A.M. van; Burg, N.P.G. van der; Bakker, N.J.; Kinderman, R.; Sommeling, P.M.; Späth, M. (ECN, Petten (Netherlands));

Kern, R.; Sastrawan, R.; Ferber, J.; Schubert, M.; Hasenhindl, G.; Schill, C.; Lorenz, M.; Stangl, R.; Baumgärtner, S.; Peter, C. (FMF, Freiburg (Germany)); Meyer, A.; Meyer, T. (Solaronix S.A., Aubonne (Switzerland)); Uhlendorf, I.; Holzbock, J.; Niepmann, R. (INAP, Gelsenkirchen (Germany))

Long term stability of dye sensitized solar cells for large area power applications : LOTS-DSC publishable report

Petten : ECN, November 2001. – 11 p.

Keywords: Solar cells

ECN-C--01-125

Koene, F.G.H.; Ligthart, F.A.T.M. (ECN, Petten (Netherlands));

Schellen, H.L. (Technical University, Eindhoven (Netherlands)); Jutte, B.A.H.G.; Kragt, W. (Instituut Collectie Nederland ICN, Amsterdam (Netherlands)); Stappers, M.H.L. (Rijksdienst voor de Monumentenzorg, Zeist (Netherlands))

Stralingsbranders in de Grote Sint Laurenskerk in Alkmaar : hoe gaan gebruik en behoud van de kerk samen

Petten : ECN, December 2001. – 47 p.

Keywords: Grote Sint Laurenskerk Alkmaar; Vloerverwarming; Stralingsbranders; Optimale regeling; Condensatiegevaar

ECN-C--01-126

Schuring, E.W.

Qualification test program futura CFRP tubes

Petten : ECN, November 2001. – 42 p.

Keywords: Interlaminar shear tests; Compressor strength; Carbon Fibre Reinforced Plastic (CFRP); Mechanical properties; Microstructure

ECN-C--01-128

Borg, N.J.C.M. van der (ECN, Petten (Netherlands));

Berg, W.D. van den Berg (Meteo Consult, Wageningen (Netherlands))

Korte termijn voorspelling van de opbrengst van PV-systemen

Petten : ECN, December 2001. – 17 p.

Keywords: Korte termijn prognose; PV-energie; Programmaverantwoordelijkheid; Elektriciteitswet

ECN-C--01-129

Boonekamp, P.G.M. (ECN, Petten (Netherlands));

Mannaerts, H. (CPB, Den Haag (Netherlands)); Tinbergen, W. (CBS, Den Haag (Netherlands));

Vreuls, H.H.J. (NOVEM, Utrecht (Netherlands)); Wesselink, B. (RIVM, Bilthoven (Netherlands))

Protocol Monitoring Energiebesparing: CBS, CPB, ECN, NOVEM en RIVM

Petten : ECN, December 2001. – 82 p.

Keywords: Monitoring; Energy use

ECN-C--01-130

Bot, E.T.G.

Aërodynamische tabel generator : technische beschrijving

Petten : ECN, December 2001. – 31 p.

Keywords: Aerodynamische coëfficiënten; Windturbinebladen

ECN-C--02-002

Ligthart, F.A.T.M.; Kester, J.C.P.

Energieprogramma voor bedrijventerrein Boekelermeer Zuid 2, Alkmaar

Petten : ECN, November 2001. – 37 p.

Keywords: Boekelermeer; Alkmaar; Huisvuilcentrale; Warmtenet; Windenergie; CO₂-reductie; Duurzaam bedrijventerrein

3.2 I-Publications

ECN-I--01-003

Hugill, J.A.; Overbeek, J.P.; Spoelstra, S.

A comparison of the eco-efficiency of two production routes for methanol

Petten : ECN, February 2001. – 66 p.

Keywords: Methanol; Production; Energy efficiency; Exergy; Electrochemistry; Life cycle; Material balance; Energy balance; Flowsheets; Comparative evaluations; Environmental impacts

ECN-I--01-004

Correia, L.A.; Dorst, E.M. van

Prestatiemetingen aan een foto-elektrochemische reactor

Petten : ECN, February 2001. – 27 p.

Keywords: Electrochemistry; Chemical reactors; Photovoltaic cells; Titanium oxides; Electrochemical cells; Performance; Energy efficiency; Systems analysis; Service life; Cost; Photoanodes; Carbon; Platinum; Electrocatalysts; Photocurrents; Water; Oxygen; Protons; Solar radiation

ECN-I--01-005

Warmer, C.J.; Kamphuis, I.G.

Computerised intelligence in small scale home networks and beyond : opportunities for energy efficiency

Petten : ECN, November 2001. – 92 p.

Keywords: Home automation; Intelligent networks; Distributed systems; Energy management; Comfort management

ECN-I--01-006

Voogt, M.H.

Renewable energy burden sharing - REBUS : manual for the REBUS model

Petten : ECN, April 2001. – 25 p.

Keywords: R codes; Manuals; European Union; Certification; Renewable energy sources; Electricity; Cost; Decision making; Trade; Prices; Regional analysis

ECN-I--01-007

Brand, A.J.; Hegberg, T.; Borg, N.J.C.M. van der; Kok, J.K.; Selow, E.R. van; Kamphuis, I.G.; Noord, M. de ; Sambeek, E.J.W. van

Tussenrapport aanbodvoorspeller duurzame energie

Petten : ECN, May 2001. – 80 p.

Keywords: Windenergie; Zonne-energie; Elektriciteitswet 1998; Korte-termijn productie prognose; Netherlands; Forecasting; Renewable energy sources; Energy supplies; Recommendations; Wind power; Solar energy; Feasibility studies; Technology assessment; Market; Economic impact; Systems analysis; Program management

ECN-I--01-009

Smeding, S.F.

Overzicht commercieel verkrijgbare warmtewisselaars : technische en economische kentallen

Petten : ECN, July 2001. – 66 p.

Keywords: Restwarmte; Warmteoverdracht; Compacte warmtewisselaar; Shell and Tube; Platenwarmtewisselaar; Warmteoverdrachtscoëfficiënt; Enhanced heattransfer; Kosten; Vervuiling; Drukval; Chemische reactie

ECN-I--01-010

Wentink, C.H.M.; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J.; Lafleur, M.C.C.
Regelgeving ten aanzien van cadmium in zonnepanelen : interpretatie en consequenties van Nederlandse en Europese regelgeving voor toepassing van cadmium in zonnepanelen en gebruik van zulke zonnepanelen

Petten : ECN, July 2001. – 11 p.

Keywords: CdTe; CIGS; Dunne-film zonnecellen; Regelgeving; Cadmium; Nederland; Europese Unie

ECN-I--01-012

Boots, M.G.; Schaeffer, G.J.; Zoeten-Dartenset, C. de
The interaction between electricity, heat and gas in a tradable green certificate system : paper for the analysis phase of InTraCert

Petten : ECN, August 2001. – 29 p.

Keywords: Green certificate

ECN-I--01-014

Brink, H.M. ten; Schaap, M.; Vermeulen, A.; Even, A.; Slanina, J.; Erisman, J.W.; Groot, G.J. de (ECN, Petten (Netherlands));

Builtjes, P. (TNO-MEP, Apeldoorn (Netherlands))

Voortgangsrapportage over het jaar 2000 : klimaatveranderingen en aërosolen. Een project uitgevoerd in opdracht van het ministerie van Economische Zaken

Petten : ECN, September 2001. – 45 p.

Keywords: Klimaatverandering; Aerosolen

ECN-I--01-017

Eikelboom, J.A.; Borg, N.J.C.M. van der; Jansen, M.J.

The hot string and the cool module : case study of fault detection in PV systems by means of IR photography

Petten : ECN, October 2001. – 18 p.

Keywords: PV system; Infrared photography

ECN-I--01-019

Dijkstra, J.W.; Boer, R. de

Kristallisatie : een belangrijke processtap in de productie van een vaste-stof/damp reactor

Petten : ECN, December 2001. – 44 p.

Keywords: Kristallisatie; Vaste-stof/damp sorptie systemen; Thermodynamica; Fasendiagrammen; Kristalgroei; Nucleatie; Deeltjesgrootteverdeling; Kristallisator

3.3 P-Publications

ECN-P--01-001

Blackstone, R. (ECN, Petten (Netherlands));
 Heijn, J.A. (BetaText, Bergen (Netherlands)) (ed.)
Jaarverslag 2000
 Petten : ECN, May 2001. – 44 p.
Keywords: Annual report

ECN-P--01-002

Heijn, J.A. (BetaText, Bergen (Netherlands)) (ed.)
Annual Report 2000
 Petten : ECN, July 2001. – 44 p.
Keywords: Annual report; ECN

ECN-P--01-003

Bruijn, A.
Energie Verslag Nederland 2000
 Petten : ECN, May 2001. – 128 p.
Keywords: Public utilities; Energy conservation; Reviews; Technology assessment; Environmental policy; Netherlands; Research programs; Market; Statistical data; Nitrogen oxides; Power generation; Energy Policy; Financial incentives; Political aspects; Emission; Energy demand; Sectoral analysis; Climatic change; Supply and demand; Technology utilization; Carbon dioxide; Sulfur dioxide; Competition; Petroleum industry; Prices; Legal aspects; Biomass; Petroleum refineries; Energy expenses; Natural gas industry; International agreements; Fuel cells; Exploration; Resource exploitation

ECN-P--01-004

Sinke, W.C.; Kinderman, R.; Laas, L.J.
20 veelgestelde vragen over zonne-energie
 Petten : ECN, February 2001. – 7 p.
Keywords: Zonne-energie; Solar energy

ECN-P--01-006

Beurskens, H.J.M. (ECN, Petten (Netherlands));
 Kuijk, G. van (TU, Delft (Netherlands))
Alles in de wind : vragen en antwoorden over windenergie
 Petten : ECN, May 2001. – 32 p.
Keywords: Windenergie

ECN-P--01-007

Snel, H. (ECN, Petten (Netherlands));
 Harrison, R.; Hau, E.
Large wind turbines : design and economics
 Petten : ECN, January 2001. – 200 p.
Keywords: Wind turbines

ECN-P--01-008

Schrover, A.J.M.

Jaarverslag 2000 : Veiligheid, Gezondheid, Welzijn en Milieu (VGWM)

Petten : ECN, September 2001. – 28 p.

Keywords: Jaarverslag; Veiligheid, Gezondheid, Welzijn en Milieu (VGWM)

ECN-P--01-009

Scheepers, M.J.J. ; Kaal, M.B.T.; Groenendaal, B.J.; Rijkers, F.A.M.; Boots, M.G.; Sambeek, E.J.W. van; Noord, M. de; Lange, T.J. de; Wals, A.F.

Energie Markt Trends 2001

Petten : ECN, October 2001. – 100 p.

Keywords: Energiebeleid; Marktregulering; Marktstructuur; Strategie; Technologiekeuze; Energieprijzen; Forecasting; Netherlands; Energy supplies; Resource potential; Emission; Greenhouse gases; Sectoral analysis; Socio-economic factors; Population dynamics; Economic development; International relations; Planning; Technology assessment; Energy consumption

ECN-P--01-011

Sinke, W.C.

Veelgestelde vragen over fotonvoltaïsche zonne-energie

Petten : ECN, October 2001. – 13 p.

Keywords: Zonne-energie

ECN-P--01-013

Römer, J.C. (ECN, Petten (Netherlands));

Hensen J. (TU, Eindhoven (Netherlands)) (ed.); Plokker, W. (TNO Bouw, Delft (Netherlands)) (ed.)

3e IBPSA-NVL conferentie 'Beter ontwerp door gebouw prestatie simulaties' : conferentie presentaties

Petten : ECN, December 2001. – 208 p.

Keywords: Gebouw prestatie; Simulatiemodellen; Energiebesparing; Software

3.4 R-Publications

ECN-R--01-001

Burgers, A.R.

Optical measurement on transparent sheets- and sandwich samples determining the optical properties $n()$ and $k ()$ from reflection and transmission measurements

Petten : ECN, February 2001. – 13 p.

Keywords: Optical properties; Sheets; Optical reflection; Light transmission; Refractive index; Absorption; Silicon solar cells; Wavelengths

ECN-R--01-002

Weijers, E.P.; Even, A.; Kos, G.P.A.; Groot, A.T.J.; Erisman, J.W.; Brink, H.M. ten

Particulate matter in urban air: health risks, instrumentation, measurements and political awareness

Petten : ECN, July 2001. – 69 p.

Keywords: Particulate matter; Urban air quality; Vehicle emissions; Health effects; Particle mass; Chemical composition; Sampling; Analysis; SJAC; CPC; LAS-X

ECN-R--01-003

Brink, H.M. ten ; Hensen, A.; Khlystov, A. (ECN, Petten (Netherlands));

Dorland, R. van ; Jeuken, A.; Velthoven, P. van (KNMI, De Bilt (Netherlands)); Lelieveld, J.; Berg, A. van den (IMAU, Utrecht (Netherlands)); Swart, D.P.J.; Bergwerff, J.B.; Apituley, A. (RIVM, Bilthoven (Netherlands)); Veefkind, J.P. (FEL-TNO, The Hague (Netherlands))

Aerosol; cycle and influence on the radiation balance = MEMORA: Measurement and Modeling of the reduction of Radiation by Aerosol

Petten : ECN, June 2001. – 133 p.

Keywords: Aerosols

3.5 RX-Publications

ECN-RX--01-001

Corten, G.P.

Heat generation by a wind turbine

Petten : ECN, January 2001. – 7 p.

Keywords: Heat; Wind turbines; Kinetic energy; Power generation; Actuators; Shear; Viscous flow; Heat transfer

ECN-RX--01-002

Corten, G.P.

Inviscid stall model

Petten : ECN, January 2001. – 8 p.

Keywords: Wind turbines; Rotors; Mathematical models; Air flow; Radial velocity; Pressure gradients; Coriolis force; Rotation

ECN-RX--01-003

Corten, G.P.

Terrain concentration : a hypothesis for multiple power levels

Petten : ECN, January 2001. – 6 p.

Keywords: Wind turbines; Complex terrain; Wind; Availability; Velocity; Power

ECN-RX--01-004

Lindenburg, C.

Stall coefficients : aerodynamic airfoil coefficients at large angles of attack

Petten : ECN, January 2001. – 18 p.

Keywords: Wind turbines; Airfoils; Aerodynamics; Rotors; Geometry; Drag; Mathematical models

ECN-RX--01-005

Wild, P.J. de; Verhaak, M.J.F.M.

Catalytic production of hydrogen from methanol

Petten : ECN, January 2001. – 15 p.

Keywords: Methanol; Hydrogen production; Catalytic steam reforming; Catalytic washcoat; Foam; Heat exchanger

ECN-RX--01-006

Schepers, J.G.

EU projects in German Dutch Wind Tunnel, DNW

Petten : ECN, January 2001. – 11 p.

Keywords: Netherlands; Federal republic of Germany; Wind tunnels; Program management; Airfoils; Acoustic measurements; Rotors; Test facilities; Aerodynamics; Design; Computer calculations; Power

ECN-RX--01-007

Huiberts, R.C.; Huijsmans, J.P.P.

Pilot production of planar SOFC components at InDEC Ltd

Petten : ECN, January 2001. – 4 p.

Keywords: Ceramics; Sofc; Innovation; Fuel cells

ECN-RX--01-008

Ree, R. van; Korbee, R. (ECN, Petten (Netherlands));

Meijer, R.; Konings, T.; Aart, F. van (KEMA, Arnhem (Netherlands))

Operational experiences of (in)direct co-combustion in coal and gas fired power plants in Europe
Petten : ECN, February 2001. – 18 p.

Keywords: Operation; Cocombustion; Coal; Natural gas; Fossil-fuel power plants; Europe; Biomass; Wastes; Environmental effects; Efficiency; Gasification; Pyrolysis; Comparative evaluations; Slags; Fouling; Corrosion; Erosion; Fly ash; Ashes; Gypsum; Emission

ECN-RX--01-009

Sloot, H.A. van der (ECN, Petten (Netherlands));

Kosson, D.S. (Vanderbilt Univ., Nashville, Tennessee, (US)); Hjelm, O. (DHI, Horsholm (Denmark))

Characteristics, treatment and utilization of residues from municipal waste incineration
Petten : ECN, February 2001. – 21 p.

Keywords: Leaching; Treatment; Waste incineration; Residues; Environmental impact; Ash

ECN-RX--01-010

Rak, Z.S.; Berkeveld, L.; Snijders, G.

C/SiC composites for tribological application

Petten : ECN, March 2001. – 25 p.

Keywords: C/SiC composites; Manufacturing methods; Low-cost processing; Carbon fibres; Silicon carbide; Phenolic resin; Pressure infiltration; Resin infiltration; Pyrolysis; Tribological tests; Automotive application

ECN-RX--01-011

Reith, J.H.; Veenkamp, J.M.; Ree, R. van (ECN, Petten (Netherlands));

Laat, W.T.A.M. de; Niessen, J.J. (Royal Nedalco BV, Bergen op Zoom (Netherlands)); Jong, E. de; Elbersen, H.W.; Claassen, P.A.M. (Agrotechnological Research Institute ATO BV, BU Renewable Resources (Wageningen, Netherlands))

Co-production of bio-ethanol, electricity and heat from biomass wastes : potential and R&D issues

Petten : ECN, April 2001. – 12 p.

Keywords: Bio-ethanol; Electricity; Biomass wastes; Heat

ECN-RX--01-012

Brink, R.W. van den

Combined catalytic removal of N₂O and NO_x from the tail gases of a nitric acid plant

Petten : ECN, April 2001. – 15 p.

Keywords: Emission reduction; Nitrous oxide; N₂O greenhouse gases; Nitric oxides; NO_x; Abatement; Selective catalytic reduction; SCR

ECN-RX--01-013

Borg, N.J.C.M. van der; Wiggelinkhuizen, E.J.

Irradiation loss in the built environment

Petten : ECN, October 2001. – 4 p.

Keywords: Built environment; PV-systems

ECN-RX--01-014

Bultman, J.H.; Burgers, A.R.; Hoornstra, J.; Kinderman, R.; Koppes, M.; Soppe, W.J.; Weeber, A.W.

Ideal single diffusion step selective emitters : a comparison between theory and practice

Petten : ECN, October 2001. – 6 p.

Keywords: Solar cells

ECN-RX--01-015

Moor, H.H.C. de; Doeswijk, L.M.

Exploring the surface passivation of oxides on silicon by pulsed laser deposition

Petten : ECN, October 2001. – 1 p.

Keywords:

ECN-RX--01-016

Eikelboom, D.W.K.; Burgers, A.R.; Goris, M.J.A.A.; Manshanden, P.; Schönecker, A.; Wyers, G.P.

Conductive adhesives for interconnection of busbarless emitter wrap-through solar cells on a structured metal foil

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; Metal foil

ECN-RX--01-017

Goris, M.J.A.A.; Weeber, A.W. (ECN, Petten (Netherlands));

Jooss, W.; Huster, F. (University of Konstanz, Konstanz (Germany))

Comparison of emitters diffused using an IR belt furnace and a POCl₃ system

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells

ECN-RX--01-018

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

Contact resistances measured using the Corescanner : relations with cell processing

Petten : ECN, October 2001. – 4 p.

Keywords: Corescan; Solar cells

ECN-RX--01-019

Heskes, P.J.M.; Eikelboom, J.A.; Rooij, P.M.; (ECN, Petten (Netherlands));

Bettenwort, G.; Margaritas, B. (Ascom Energy Systems, Soest (Germany)); Ortjohann, E. (Paderborn University, Soest (Germany))

A new low-cost modular inverter using advanced ASIC control : rigorous performance tests result in rapid adaptation to market demands

Petten : ECN, October 2001. – 4 p.

Keywords: Inverter; PV-systems

ECN-RX--01-020

Kroon, J.M. (ECN, Petten (Netherlands));
 Hinsch, A.; Kern, R.; Sastrawan, R. (FMF, Freiburg (Germany)); Meyer, A. (Solaronix S.A.,
 Aubonne (Switzerland)); Uhlendorf, I. (Institut für Angewandte Photovoltaik INAP, Gelsenkirchen
 (Germany))

Long-term stability and efficiency of dye-sensitized solar cells

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; Dye sensitisation

ECN-RX--01-021

Nieuwenhout, F.D.J.; Vervaart, M.R. (ECN, Petten (Netherlands));
 Rijt, P.J.N.M. van der (Shell Solar Energy, Helmond (Netherlands))

Monitoring of solar home systems in China : first year results

Petten : ECN, October 2001. – 4 p.

Keywords: Solar home systems; Developing countries

ECN-RX--01-022

Soppe, W.J.; Devilee, C.; Schiermeier, S.E.A.; Weeber, A.W. (ECN, Petten (Netherlands));
 Hong, J.; Kessels, W.M.M.; Sanden, M.C.M. van de (Eindhoven University of Technology, Eindhoven
 (Netherlands)); Arnoldbik, W.M. (Debye Institute, Utrecht University, Utrecht (Netherlands))

Bulk and surface passivation by silicon nitride grown by microwave enhanced PECVD

Petten : ECN, October 2001. – 4 p.

Keywords: Silicon nitride; PECVD

ECN-RX--01-023

Tool, C.J.J.; Burgers, A.R.; Manshanden, P.; Weeber, A.W. (ECN, Petten (Netherlands));
 Straaten, B.H.M. van (Shell Solar Energy, Helmond (Netherlands))

Effect of wafer thickness on the performance of mc-Si solar cells

Petten : ECN, October 2001. – 4 p.

Keywords: Solar cells; C-Si; Si wafer thickness

ECN-RX--01-024

Weeber, A.W.; Soppe, W.J.

Continuous SiNx plasma processing using the inline MW RPECVD system

Petten : ECN, October 2001. – 4 p.

Keywords: PECVD; Silicon-nitride

ECN-RX--01-025

Zondag, H.A.; Jong, M.J.M.; Helden, W.G.J. van

Development and applications for PV thermal

Petten : ECN, October 2001. – 6 p.

Keywords: PV thermal collector

ECN-RX--01-026

Jong, M.J.M.; Zondag, H.A.

System studies on combined PV thermal panels

Petten : ECN, May 2001. – 12 p.

Keywords: Solar energy; PV panels

ECN-RX--01-027

Jong, M.J.M.

System studies on combined PV thermal panels

Petten : ECN, May 2001. – 9 p.

Keywords: PV; Thermal panels

ECN-RX--01-028

Kaan, H.F.

Building low cost low energy houses in Lithuania : not that difficult

Petten : ECN, May 2001. – 7 p.

Keywords: Energy houses; Buildings; Lithuania; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

ECN-RX--01-029

Kaan, H.F.

Towards an energy performance standard for the building stock in Lithuania

Petten : ECN, May 2001. – 6 p.

Keywords: Lithuania; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

ECN-RX--01-030

Kaan, H.F.

Housing construction in Beijing, Tianjin and Shanghai : a great leap forward in energy awareness

Petten : ECN, May 2001. – 10 p.

Keywords: China; Houses; Energy efficiency; Construction; Design; Netherlands; Energy efficiency standards; Urban areas; Planning

ECN-RX--01-031

Kaan, H.F.; Dijk, A.L. van; Leeuwen, M. van

PV on existing roofs : experiences of sixty households

Petten : ECN, May 2001. – 14 p.

Keywords: PV; Roofs; Households; Houses; Design; Netherlands; Photovoltaic power supplies; Roofs; Households; Experiment planning; Construction; Reliability; Energy yield; Licensing regulations; Public opinion

ECN-RX--01-032

Boer, B.J. de; Helden, W.G.J. van

PV Mobi : PV modules optimised for building integration

Petten : ECN, May 2001. – 13 p.

Keywords: PV; PV modules; Building integrations; Photovoltaic power supplies; Buildings; Performance testing; Energy yield; Design; Computerized simulation; Heating; Cooling

ECN-RX--01-033

Schaap, M.; Brink, H.M. ten (ECN, Petten (Netherlands));

Müller, K. (Institut für Troposphäre e.V., Leipzig (Germany))

Construction the European aerosol nitrate concentration field from experimental data

Petten : ECN, June 2001. – 38 p.

Keywords: Nitrate field; Sampling artefacts; Critical evaluation

ECN-RX--01-034

Kinderman, R.; Bultman, J.H.; Hoornstra, J.; Koppes, M.; Weeber, A.W.

First xSi cell results using selective emitters formed with diffusion barriers in one step

Petten : ECN, June 2001. – 2 p.

Keywords: Solar cells

ECN-RX--01-035

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

Error diagnosis and optimisation of cSi solar cell processing using contact resistances determined with the CoreScanner

Petten : ECN, June 2001. – 2 p.

Keywords: Solar cells

ECN-RX--01-036

Bach, P.W.; Haije, W.G.

Heat storage and transformation

Petten : ECN, October 2001. – 17 p.

Keywords: Heat storage

ECN-RX--01-037

Visscher, K.

Medium-term solar heat storage in a water filled bag tank

Petten : ECN, June 2001. – 13 p.

Keywords: Solar heat storage

ECN-RX--01-038

Schuring, E.W.

Metallografie en fractografie in nucleair materiaalonderzoek : reparatielassen van bestraald ASI316L en schadetolerantie in reactorvatmeritaliaal A508cl3

Petten : ECN, June 2001. – 21 p.

Keywords: Metallografie; Fractografie; Materiaalonderzoek

ECN-RX--01-039

Seebregts, A.J.; Smekens, K.E.L. (ECN, Petten (Netherlands));

Goldstein, G.A. (International Resources Group Ltd, Washington (United States))

Energy/Environmental modeling with the MARKAL family models

Petten : ECN, December 2001. – 8 p.

Keywords: MARKAL

ECN-RX--01-040

Rietra, R.P.J.J.; Sloot, H.A. van der; Zomeren, A. van (ECN, Petten (Netherlands));

Bleijerveld, R. (VBM, Rotterdam (Netherlands))

Integration of lab-scale testing and pilot scale monitoring of a stabilised waste landfill to reach sustainable landfill

Petten : ECN, August 2001. – 11 p.

Keywords: Landfill

ECN-RX--01-041

Tool, C.J.J.; Burgers, A.R.; Manshanden, P.; Weeber, A.W. (ECN, Petten (Netherlands));
Straaten, B.H.M. (Shell Solar Energy, Helmond (Netherlands))

Influence of wafer thickness on the performance of multicrystalline Si solar cells : an experimental study

Petten : ECN, October 2001. – 18 p.

Keywords: Photovoltaics; Wafer thickness; Lifetime; BSF; Multicrystalline silicon; PC1D modelling

ECN-RX--01-042

Brink, H.M. ten (ECN, Petten (Netherlands));

Stammes, P.; Henzing, J.S.; Knap, W.H. (KNMI, De Bilt (Netherlands)); Swart, D.P.J.; Apituley, A.; Bergwerff, J.B. (RIVM, Bilthoven (Netherlands))

The effect of aerosol on closure of the regional short-wave radiation balance : CLOSAeR

Petten : ECN, December 2001. – 106 p.

Keywords: Aerosol

ECN-RX--01-043

Sloot, H.A. van der (ECN, Petten (Netherlands));

Woelders, H. (Essent, Wijster (Netherlands))

Leaching behaviour of Essent Bioreactor rest product at different stages of degradation in lab and pilot scale to assess potential utilization options

Petten : ECN, July 2001. – 11 p.

Keywords: Flushing bioreactor; Residues; Leaching; Trace elements; Environmental impact; Re-use

ECN-RX--01-044

Sloot, H.A. van der; Rietra, R.P.J.J. (ECN, Petten (Netherlands));

Vroon, R.C. (TNO-MEP, Apeldoorn (Netherlands)); Scharff, H. (Afvalzorg Deponie, Haarlem (Netherlands)); Woelders, J.A. (Essent, Wijster (Netherlands))

Similarities in the long term leaching behaviour of predominantly inorganic waste, MSWI bottom ash, degraded MSW and bioreactor residues

Petten : ECN, July 2001. – 10 p.

Keywords: Leaching

ECN-RX--01-045

Sloot, H.A. van der

European activities on harmonisation of leaching/extraction tests and standardisation in relation to the use of alternative materials in construction

Petten : ECN, July 2001. – 13 p.

Keywords: Leaching

ECN-RX--01-046

Lenzmann, F.; O'Regan, B.C.; Wienke-Ullrich, J.A. (ECN, Petten (Netherlands));

Huisman, C.; Reijnen, L.; Goossens, A. (Laboratory for Applied Inorganic Chemistry, TU Delft, Delft (Netherlands)); Ruehle, S.; Cahen, D. (Department of Materials and Interfaces, Weizmann Institute of Science, Rehovot (Israel))

Surface photovoltage spectroscopy (SPS) : a useful tool for the detection of charge carrier injection processes in extremely thin absorber (ETA) solar cells

Petten : ECN, July 2001. – 1 p.

Keywords: Solar cells

ECN-RX--01-047

Heide, A.S.H. van der; Bultman, J.H.; Hoornstra, J.; Schönecker, A.

Contact resistance scanning for process optimization : the Corescanner method

Petten : ECN, August 2001. – 4 p.

Keywords: Corescanner; Solar cells

ECN-RX--01-048

Heide, A.S.H. van der (ECN, Petten (Netherlands));

Breitenstein, O.; Rakotoniaina, J.P. (Max-Planck-Institut für Mikrostrukturphysik, Halle (Germany))

Shunt detection in solar cells with the Corescanner and lock-in thermography : a comparison

Petten : ECN, August 2001. – 4 p.

Keywords: Solar cells; Corescanner

ECN-RX--01-049

Klunne, W.E.; Westra, C.A.; Cox, R.L.M.; Gys, L.J.C.

Improving the availability of PV-systems at South African schools and clinics

Petten : ECN, October 2001. – 4 p.

Keywords: PV-systems; South Africa; Developing countries

ECN-RX--01-050

Westra, C.A.; Roekel, G.M. van (ECN, Petten (Netherlands));

Lasschuit, P.E. (Nexus Consultants (Netherlands))

Financial sustainability of PV implementation in Swaziland

Petten : ECN, October 2001. – 3 p.

Keywords: PV systems; Swaziland

ECN-RX--01-051

Papageorgopoulos, D.C.; Bruijn, F.A. de

Examining a potential fuel cell poison : a voltammetry study of the influence of carbon dioxide on the hydrogen oxidation capability of carbon supported Pt and PtRu anodes

Petten : ECN, October 2001. – 31 p.

Keywords: Fuel cells

ECN-RX--01-052

Corten, G.P. (ECN, Petten (Netherlands));

Veldkamp, H.F. (NEG Micon A.S., Randers (Denmark))

Insects cause double stall

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Insect accumulation; Double stall; Stall flags

ECN-RX--01-053

Corten, G.P.

Inviscid stall model

Petten : ECN, September 2001. – 5 p.

Keywords: Wind turbines; Stall rotation effects; Three-dimensional flow effects; Boundary layer

ECN-RX--01-054

Corten, G.P.

Novel views on the extraction of energy from wind : heat generation and terrain concentration

Petten : ECN, September 2001. – 5 p.

Keywords: Actuator disk model; Terrain; Siting

ECN-RX--01-055

Hulle, F.J.L. van (ECN, Petten (Netherlands));

Nath, C. (GL Wind, Hamburg (Germany)); Hjuler Jensen, P. (RISØ, Roskilde (Denmark)); Eriksen, C. (DNV, Hellerup (Denmark)); Vionis, P. (CRES, Attiki (Greece))

Harmonisation of European wind turbine certification

Petten : ECN, September 2001. – 4 p.

Keywords: Wind turbines; Certification; European harmonisation

ECN-RX--01-056

Schepers, J.G.; Brand, A.J. (ECN, Petten (Netherlands));

Madsen, H. (RISØ, Roskilde (Denmark)); Stefanatos, N. (CRES, Pikermi (Greece)); Simms, D.; Hand, M. (NREL, Colorado (US)); Bruining, A.; Rooij, R. van (TU Delft, Delft (Netherlands)); Shimizu, Y.; Maeda, T. (Mie University, Mie (Japan)); Graham, M. (Imperial College, Department of Aeronautics, London (United Kingdom))

IEA annex XIV/XVIII, field rotor aerodynamics

Petten : ECN, September 2001. – 5 p.

Keywords: Aerodynamics; Blade aerodynamics; Data bases

ECN-RX--01-057

Rajsekhar, B.; Hulle, F.J.L. van

Scope and prospects of re-engineering and retrofitting windfarms in India

Petten : ECN, September 2001. – 4 p.

Keywords: Wind farm development; Re-engineering of windfarms; India; Emission trading

ECN-RX--01-058

Hendriks, H.B.; Lindenburg, C.; Kooijman, H.J.T.; Bulder, B.H. (ECN, Petten (Netherlands)); Bozelie, J.; Madsen, J.B. (NEG Micon, Heerenveen (Netherlands)); Halfschepel, R. (Van Oord ACZ, Gorinchem (Netherlands)); Molenaar, W. (Ballast Nedam, Nieuwegein (Netherlands)); Berg, R. van den (LM Glasfiber, Den Helder (Netherlands)); Zaaijer, M. (TU, Delft (Netherlands))

Application of an advanced cost model in the different design phases of an offshore wind turbine

Petten : ECN, September 2001. – 5 p.

Keywords: Wind turbines; Off-shore; Cost analyses; Optimization

ECN-RX--01-059

Schepers, J.G.; Heijdra, J.J. (ECN, Petten (Netherlands));

Thomsen, K.; Larsen, T. (RISØ, Roskilde (Denmark)); Foussekis, D. (CRES, Attiki (Greece)); Rawlinson Smith, R. (Garrad Hassan, Bristol (United Kingdom)); Kraan, I.; Visser, B. (SPE, Amsterdam (Netherlands)); Oye, S. (DTU, Lyngby (Denmark)); Ganander, H.; Carlen, I. (Teknikgruppen AB, Sollentuna (Sweden)); Voutsinas, S.; Belessis, M. (Nat. Techn. University of Athens, Athens (Greece)); Drost, L. (Lagerwey, Barneveld (Netherlands))

Verification of European wind turbine design codes

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Aeroelasticity; Fatigue; Models; Wind field simulation

ECN-RX--01-060

Engelen, T.G. van; Hooft, E.L. van der; Schaak, P.

Development of wind turbine control algorithms for industrial use

Petten : ECN, September 2001. – 6 p.

Keywords: Wind turbines; Control; Variable speed operation; Dynamic models

ECN-RX--01-061

Klunne, W.E.; Beurskens, H.J.M.; Westra, C.A.

Wind repowering in the Netherlands

Petten : ECN, September 2001. – 2 p.

Keywords: Energy policies; Retrofitting; Stand alone systems; Wind farm

ECN-RX--01-062

Pierik, J.T.G. (ECN, Petten (Netherlands));

Dunlop, R.W.; Lee, W.K. (NEL, Glasgow (United Kingdom)); Gabriel, J. (DEWI, Wilhelmshafen (Germany))

Performance evaluation methods for autonomous, applications orientated wind turbine systems

Petten : ECN, September 2001. – 4 p.

Keywords: Autonomous wind turbine systems; Power performance evaluation; Electrical systems

ECN-RX--01-063

Kooijman, H.J.T.; Noord, M. de; Volkers, C.H.; Machielse, L.A.H.; Eecen, P.J.; Pierik, J.T.G.; Herman, S.A.; (ECN, Petten (Netherlands));

Hagg, F. (SPE, Amsterdam (Netherlands))

Cost and potential of offshore wind energy on the Dutch part of the North Sea

Petten : ECN, September 2001. – 4 p.

Keywords: Resources; Cost analyses; Cost of energy; Off-shore

ECN-RX--01-064

Bulder, B.H.; Schepers, J.G.

Numerical optimisation for wind turbine design, based on aero-elastic analysis

Petten : ECN, September 2001. – 3 p.

Keywords: Wind turbines; Optimisation; Design tool

ECN-RX--01-065

Bruijn, F.A. de; Papageorgopoulos, D.C.; Sitters, E.F.; Janssen, G.J.M.

The influence of carbon dioxide on PEM fuel cell anodes

Petten : ECN, October 2001. – 23 p.

Keywords: PEM fuel cell (PEMFC); Reformate; CO₂-tolerance; Reverse water gas shift

ECN-RX--01-066

Veen, H.M. van; Delft, Y.C. van; Engelen, C.W.R.; Pex, P.P.A.C.

Dewatering of organics by pervaporation with silica membranes

Petten : ECN, October 2001. – 15 p.

Keywords: Pervaporation; Dewatering; Silica; Ceramic membrane

ECN-RX--01-067

Kroon, J.M.; Wienk, M.M. (ECN, Petten (Netherlands));
Katz, E.A.; Faiman, D.; Tuladhar, S.M. (Ben Gurion University of the Negev, Sede Boquer Campus (Israel)); Fromherz, T.; Padinger, F. (QSEL, Linz (Austria)); Brabec, C.J.; Sariciftci, N.S. (LIOS, Linz (Austria))

Temperature dependence for the photovoltaic device parameters of polymer-fullerence solar cells under operating conditions

Petten : ECN, November 2001. – 8 p.

Keywords: Solar cells

ECN-RX--01-068

Ree, R. van

Inzet (en verkrijgbaarheid) van biomassa als brandstof

Petten : ECN, November 2001. – 13 p.

Keywords: Biomassa; Brandstof

ECN-RX--01-069

Hinsch, A.; Kroon, J.M. (ECN, Petten (Netherlands));
Kern, R.; Ferber, J. (FMF, Freiburg (Germany)); Uhlendorf, I.; Holzbock, J. (INAP, Gelsenkirchen (Germany)); Meyer, A. (Solaronix S.A., Aubonne (Switzerland))

Long-term stability of dye-sensitised solar cells

Petten : ECN, November 2001. – 14 p.

Keywords: Solar cells

ECN-RX--01-070

Sinke, W.C.

Key technical and non-technical challenges for mass deployment of photovoltaic solar energy (PV)

Petten : ECN, December 2001. – 5 p.

Keywords: Solar energy; PV

ECN-RX--01-071

Scheepers, M.J.J.

Marges voor verduurzaming van de Nederlandse energievoorziening binnen de Europese beleidsruimte : een symposium over klimaatbeleid, duurzame energie en voorzieningszekerheid, gehouden op 23 november 2001

Petten : ECN, November 2001. – 110 p.

Keywords: Symposium; Greenhouse gas; Emission trading; Sustainable energy; Energy supply; Energy policy

ECN-RX--01-073

Martens, J.W.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));
Kaufman, S.L. (Sunrise Technologies Consulting, Arlington, MA (United States)); Green, J. (IT Power, Chineham, Hampshire (United Kingdom))

Towards a streamlined CDM process for solar home systems

Petten : ECN, December 2001. – 4 p.

Keywords: Developing countries; Solar Home Systems; Clean Development Mechanism

ECN-RX--01-074

Römer, J.C.; Schuitema, R.

Eerste experimenten met hybride ventilatiesysteem in energiezuinige ECN testwoning

Petten : ECN, June 2001. – 5 p.

Keywords: Hybride ventilatiesysteem; Energiebesparing

3.6 B-Publications

ECN-B--01-002

ECN Biomass

Fluidised bed combustion installation NARGUS

Petten : ECN, January 2001. – 2 p.

Keywords:

ECN-B--01-003

ECN Biomass

Meat and bone meal as fuel

Petten : ECN, January 2001. – 2 p.

Keywords:

ECN-B--01-004

ECN Biomass

Tiermehl als Brennstoff

Petten : ECN, January 2001. – p.

Keywords:

ECN-B--01-005

ECN Biomass

Fuel and ash behaviour in PF combustion

Petten : ECN, January 2001. – p.

Keywords:

ECN-B--01-007

ECN Solar Energy

Wij hebben iets te vieren

Petten : ECN, January 2001. – p.

Keywords:

ECN-B--01-009

ECN Biomass

Milieutechnische en financieel-economische 'Quick-scan'

Petten : ECN, January 2001. – 2 p.

Keywords:

ECN-B--01-010

ECN Corporate

Energie innovaties : strategische voornemens 2001-2004

Petten : ECN, October 2001. – 12 p.

Keywords: Energie innovatie

ECN-B--01-011

ECN Corporate

Energy innovations for the 21st century

Petten : ECN, May 2001. – p.

Keywords:

ECN-B--01-012

ECN Clean Fossil Fuels

Indec B.V. : power from ceramics

Petten : ECN, January 2001. – 2 p.

Keywords:

ECN-B--01-018

ECN Wind Energy

Wind, Tulips & Experts : ECN wind turbine test farm Wieringermeer

Petten : ECN, July 2001. – 10 p.

Keywords: Wind energy; Wieringermeer

ECN-B--01-019

ECN Clean Fossil Fuels; ECN Biomass

Gas and Fuel Analysis

Petten : ECN, July 2001. – 2 p.

Keywords:

ECN-B--01-020

ECN Policy Studies; ECN Solar Energy

PV Solar Home Systems in the CDM : streamlines procedures for solar home systems in the Clean Development Mechanism

Petten : ECN, December 2001. – 4 p.

Keywords: PV solar home systems: Clean Development Mechanism (CDM)

ECN-B--01-021

ECN Solar Energy

Sunlab Corescan

Petten : ECN, December 2001. – p.

Keywords:

4. STATISTICAL INFORMATION

ECN started in 1990 with the new publication series.

The table below includes only publications by ECN authors.

Not all general articles published in magazines, conference proceedings and other type of publications has been characterised as ECN reports. These articles are not included in this document.

Nuclear research publications are not included starting year 2000. For these publications contact the Nuclear Research and consultancy Group (NRG). This company is a joint venture in which ECN and KEMA have combined their nuclear expertise.

Serie	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Miscellaneous serie	15	9	8	12	20	5	1	0	0	0	0	0
CX publications Confidential contract reports	71	97	103	128	166	83	58	113	148	131	123	133
C publications Contract reports	62	82	86	80	71	106	96	77	88	83	104	114
I publications Internal reports	47	71	50	46	43	41	48	35	40	21	7	11
P publications Reports for broad audience	0	0	1	0	1	1	1	0	0	0	8	10
R publications Research reports	8	10	11	16	24	31	14	8	24	4	2	3
RX publications Contributions to magazines/conf.	90	115	77	108	117	55	64	66	67	35	42	73
B publications Leaflets	25	22	21	16	3	15	27	0	0	7	10	13
Total	323	413	362	408	446	337	309	187	219	153	175	224

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