

ECN publications 2000

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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 2000:

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 2000:

- ECN Corporate: 3
- ECN Policy Studies: 47
- ECN Biomass: 21
- ECN Energy Efficiency: 24
- ECN Clean Fossil Fuels: 40
- ECN Technological Services & Consultancy: 2
- ECN Wind Energy: 20
- ECN Solar Energy: 43
- ECN Renewable Energy in the Built Environment: 14
- Total: **175 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* of the publications (if available).

2. ECN PUBLICATIONS BY DEPARTMENT

(sorted out by title)

2.1 ECN Corporate

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

De Republiek der Kerneleerden

Andriessse, C.D.

ECN-P--00-007

Petten : ECN, December 2000. – 272 p.

Keywords: Geschiedenis; Kernenergie

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

2.2 ECN Policy Studies

Barriers to combined heat and power production in the Czech and Slovak Republics

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));
Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D.
(Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.);
Mikula, L.; Herich, S.; Bella, M. (Slovak Energy Agency SEA)
ECN-C--00-042

Petten : ECN, November 2000. – 133 p.

Keywords:

Bedrijfseconomische en beleidsmatige evaluatie van elektriciteits- en warmteopwekking uit afval en biomassa : deelrapport taak 3 van het Marsroute-project

Hiltten, O. van; Gerlagh, T.

ECN-C--00-100

Petten : ECN, November 2000. – 107 p.

Keywords:

Beleidsopties voor CO-2-emissiereductie en de inzet van hernieuwbare energie in een geliberaliseerde energiemarkt

Battjes, J.J.; Beeldman, M.; Jansen, J.C.; Kroon, P.; Ormel, F.; Schaeffer, G.J.; Sijm, J.P.M.

ECN-C--00-048

Petten : ECN, March 2000. – 60 p.

Keywords: Energy policy; Environmental policy; Renewable energy sources; Emission; Market; Greenhouse gases; Air pollution abatement; Netherlands; Financial incentives; Legislation; Trade; Households; Industry; Business

Biomass cofiring potential and experiences in the Netherlands

Ree, R. van; Korbee, R.; Lange, T.J. de

ECN-RX--00-035

Petten : ECN, November 2000. – 18 p.

Keywords:

Biomass for energy and industry: ECN contributions to the 1st world conference and exhibition on biomass for energy and industry

ECN-RX--00-007

Petten : ECN, June 2000. – 41 p.

Keywords: Tar; Standardization; Organic compounds; Biomass; Producer gas; International agreements; Abundance

Biomass for greenhouse gas emission reduction task 8 : optimal emission reduction strategies for Western Europe

Gielen, D.J.; Bos, A.J.M.; Feber, M.A.P.C. de; Gerlagh, T.

ECN-C--00-001

Petten : ECN, October 2000. – 161 p.

Keywords: Western europe; Biomass; Air pollution abatement; Greenhouse gases; Environmental policy; Energy policy; Mitigation; Automotive fuels; Forestry; Energy recovery; Wastes; Energy consumption; Materials; Food; Material substitution; Fuel substitution; M codes; Energy models; Data covariances; Supply and demand; Sensitivity analysis; Technology assessment; Recommendations

Biomass for greenhouse gas emission reduction task 7 : energy technology characterisation

Feber, M.A.P.C. de; Gielen, D.J.

ECN-C--99-078

Petten : ECN, January 2000. – 49 p.

Keywords: Biomass; Technology assessment; Air pollution abatement; Bioconversion; Waste disposal; Power generation; Heat; Data analysis; Energy efficiency; Carbon dioxide; Removal; Cocombustion; Gasification; Combustion; Solid electrolyte fuel cells; Fossil-fuel power plants; Stirling engines; Cogeneration; Pyrolysis; Automotive fuels; Gas fuels; Anaerobic digestion; Sanitary landfills; Fischer-tropsch synthesis

Burden differentiation: GHG emissions, undercurrents and mitigation costs : the joint CICERO-ECN project on sharing the burden of greenhouse gas reduction among countries [CICERO-WP-1999:14]

Ybema, J.R.; Battjes, J.J.; Jansen, J.C.; Ormel, F.

ECN-C--00-012

Petten : ECN, February 2000. – 36 p.

Keywords: Greenhouse gases; Emission; Environmental policy; Carbon dioxide; Methane; Nitrous oxide; Fluorinated alicyclic hydrocarbons; Sulfur fluorides; Cost; Data analysis; Data compilation; Sectoral analysis; Air pollution abatement; Mitigation

Burden differentiation: criteria for evaluation and development of burden sharing rules : CICERO working paper 2000:1

Torvanger, A.; Ringius, L. (CICERO (Oslo, Norway))

ECN-C--00-013

Petten : ECN, February 2000. – 9 p.

Keywords:

Burden differentiation: fairness principles and proposals : the joint CICERO-ECN project on sharing the burden of greenhouse gas reduction among countries (CICERO-WP 1999:13)

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

ECN-C--00-011

Petten : ECN, February 2000. – 32 p.

Keywords: Greenhouse gas; Global climate system

CO2-score bedrijven en gemeenten : ontwikkeling methodiek voor het United Air Fund

Dril, A.W.N. van; Burger, H.

ECN-C--00-107

Petten : ECN, November 2000. – 30 p.

Keywords: Business; Local government; Carbon dioxide; Emission; Environmental policy; Energy consumption; Air pollution abatement; Road transport; Households; Waste processing plants

Can Dutch co-generation survive threats of the liberalisation of the energy markets?

Battjes, J.J.; Rijkers, F.A.M.

ECN-RX--00-027

Petten : ECN, July 2000. – 18 p.

Keywords: Cogeneration; Netherlands; Market; Competition; Energy policy; Electricity; Natural gas; Economic impact; Investment; Financial incentives

Combined heat and power action plan : policy action plan for promotion of combined heat and power production in the Czech Republic to 2010

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));

Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D. (Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.)

ECN-C--00-043

Petten : ECN, November 2000. – 40 p.

Keywords: Czech republic; Cogeneration; Dual-purpose power plants; Energy policy; Forecasting; District heating; Energy efficiency; Mitigation; Air pollution abatement; Carbon dioxide; Emission; Recommendations; Institutional factors; Pricing regulations; Tariffs; Taxes; Financing; Program management; Economic impact; Social impact; Environmental impacts

Combined heat and power action plan : policy action plan for promotion of combined heat and power production in the Slovak Republic to 2010

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));

Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D. (Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.); Mikula, L.; Herich, S.; Bella, M. (Slovak Energy Agency SEA)

ECN-C--00-044

Petten : ECN, November 2000. – 30 p.

Keywords: Cogeneration; Dual-purpose power plants; Energy policy; Forecasting; District heating; Energy efficiency; Mitigation; Air pollution abatement; Carbon dioxide; Emission; Recommendations; Institutional factors; Pricing regulations; Tariffs; Taxes; Financing; Program management; Economic impact; Social impact; Environmental impacts; Slovakia

Critical success factors for the large-scale introduction of grid-connected photovoltaic systems : a survey focusing on the non-technical aspects

Groenendaal, B.J.; De Lange, T.J.; Lako, P. ; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J. de

ECN-C--00-086

Petten : ECN, November 2000. – 76 p.

Keywords:

De 'grijze' bijdragen aan StatLine : synthese van CBS-data en ECN-kennis met betrekking tot omzetting en verbruik van energie

Arkel, W.G. van

ECN-C--00-017

Petten : ECN, July 2000. – 40 p.

Keywords: Statistical data; Netherlands; Energy consumption; Buildings; Ecn; Energy conversion; Sectoral analysis; Industry; Households; Transportation sector; Energy efficiency; Natural gas; Electricity; Monitoring

Definitiestudie kennisinstrumentarium voor energie en emissies : verkenning naar de opbouw van een gezamenlijke kennisstructuur voor RIVM en ECN

Beeldman, M.; Wijngaart, R. van den (ECN, Petten (Netherlands));

Wijngaart, R. van den (Rijksinstituut voor Volksgezondheid en Milieu [RIVM])

ECN-C--00-082

Petten : ECN, September 2000. – 43 p.

Keywords: Knowledge management; Energy models; Calculation methods

ECN Policy Studies

Bruijn, A.J.

ECN-B--00-026

Petten : ECN, June 2000. – p.

Keywords:

Effectiviteit energiepremies : analyse voor het huishoudelijk verbruik tot 2010

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

ECN-C--00-062

Petten : ECN, May 2000. – 54 p.

Keywords: Energy conservation; Netherlands; Households; Financial incentives; Appliances; Comparative evaluations; Product labeling; Energy efficiency

Endogeneous learning and technology clustering: analysis with MARKAL model of the Western European energy system

Seebregts, A.J.; Kram, T.; Schaeffer, G.J.; Bos, A.J.M.

ECN-RX--00-028

Petten : ECN, March 2000. – 31 p.

Keywords: Energy system analysis; Energy model; CO2 emission reduction; Endogenous technological learning

Energie markt trends 2000

Scheepers, M.J.J. ; Battjes, J.J.; Beeldman, M.; Boots, M.G.; Burger, H.; Groenendaal, B.J.; Kaal, M.B.T.; Raad, A. de; Rijkers, F.A.M.; Schaeffer, G.J.; Voogt, M.H.; Zoeten - Dartenset, C. de
ECN-P--00-002

Petten : ECN, June 2000. – 90 p.

Keywords: 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

Energiebesparing in het MKB : de rol van branche organisaties

Menkveld, M.; Heinink, H.

ECN-C--00-093

Petten : ECN, October 2000. – 83 p.

Keywords: Energiebesparing; MKB

Energietechnologie in het spanningsveld tussen klimaatbeleid en liberalisering

Hiltten, O. van; Battjes, J.J.; Dijkstra, J.W.; Hemmes, K.; Kaal, M.B.T.; Lako, P.; Nahuis, R.; Raad, A. de

ECN-C--00-020

Petten : ECN, May 2000. – 92 p.

Keywords: Energy conversion; Climatic change; Environmental policy; Competition; Market; Technology assessment; Energy policy; Deregulation; Energy efficiency; Forecasting; Economic impact; Socio-economic factors; Technology impacts; Social impact; Carbon dioxide; Emission; Renewable energy sources

Energy market trends in the Netherlands 2000

Scheepers, M.J.J. ; Battjes, J.J.; Beeldman, M.; Boots, M.G.; Burger, H.; Groenendaal, B.J.; Kaal, M.B.T.; Raad, A. de; Rijkers, F.A.M.; Schaeffer, G.J.; Voogt, M.H.; Zoeten - Dartenset, C. de
ECN-P--00-003

Petten : ECN, June 2000. – 85 p.

Keywords: 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

Het Audi duo concept in de praktijk : milieuprestaties en de kansen en belemmeringen voor marktintroductie, bepaald in het Demonstratieproject Audi duo

Bosch, A. van den; Arkel, W.G. van; Scheepers, M.J.J.; Volkers, C.H.; Hendriksen, P.; Elst, D.A.M.M.; TNO. Wegtransportmiddelen [TNO-WT]

ECN-C--00-073

Petten : ECN, September 2000. – 149 p.

Keywords: Hybrid electric-powered vehicles; Performance testing; Environmental effects; Market; Demonstration programs; Public opinion; Fuel consumption; Emission; Data acquisition; Attitudes

INTRACERT : inception report: the role of an integrated tradable green certificate system in a liberalising market

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

Mitchell, C.; Anderson, T. (CMUR); Morthorst, P.E.; Nielsen, L. (RISO); Gual, M.; Del Rio, P.; Cadenas, A.; Hernandez, F. (UAM); Kühn, I.; Bräuer; Stronzik, M. (ZEW)

ECN-C--00-085

Petten : ECN, December 2000. – 167 p.

Keywords: Western europe; Austria; Belgium; Denmark; Finland; France; Federal republic of germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden; United kingdom; Energy policy; Trade; Market; Competition; Renewable energy sources; Greenhouse gases; Certification; Licenses; European union; Electricity; Heat; Natural gas

Kritische succesfactoren biomassa : identificatie/specificatie kritische succesfactoren bij de ontwikkeling en de marktintroductie van biomassaconversiesystemen voor de productie van elektriciteit en/of warmte en/of gasvormige/vloeibare secundaire energiedragers

Ree, R. van; Gerlagh, T.; Groenendaal, B.J.; Dinkelbach, L.; Doorn, J. van; Hemmes, K.

ECN-C--99-061

Petten : ECN, June 2000. – 85 p.

Keywords: Biomass; Availability; Netherlands; Market; Classification; Certification; Wastes; Cultivation; Biomass plantations; Imports; Bioconversion; Socio-economic factors; Technology assessment; Comparative evaluations; Combustion; Gasification; Cocombustion; Digestion; Reviews; Political aspects

Kyoto mechanisms : the role of joint implementation, the clean development mechanism and emissions trading in reducing greenhouse gas emissions

Sijm, J.P.M.; Ormel, F.; Martens, J.W.; Rooijen, S.N.M. van; Voogt, M.H.; Wees, M.T. van; Zoeten-Dartenset, C. de

ECN-C--00-026

Petten : ECN, March 2000. – 54 p.

Keywords: Greenhouse gases; Emission; Air pollution abatement; International agreements; Environmental policy; Trade; Cost; Bilateral agreements; International cooperation; Data analysis; Per capita values; Gross domestic product

Leefstijl en huishoudelijk energieverbruik: een kwalitatief onderzoek naar de relatie tussen leefstijl en energieverbruik bij bewoners van energiezuinige woningen

Uyterlinde, M.A.; Jeeninga, H.

ECN-C--00-083

Petten : ECN, August 2000. – 38 p.

Keywords: Leisure time activities; Socio-economic factors; Energy consumption; Households; Netherlands; Energy conservation; Ventilation; Space heating; Energy efficiency; Appliances; Houses; Public opinion; Attitudes; Public information

Life-cycle analysis and optimisation of solar home systems : interim report over 1999 of ENGINE project 74513

Dogger, J.D.; Nieuwenhout, F.D.J.; Vervaart, M.R.; Jansen, J.C.; Linden, N.H. van der; Lafleur, M.C.C.; Lasschuit, P.E.

ECN-C--00-047

Petten : ECN, June 2000. – 34 p.

Keywords: Life cycle; Service life; Optimization; Photovoltaic power supplies; Progress report; Systems analysis; Households; Monitoring; Socio-economic factors; Institutional factors; Data acquisition; Performance; Zimbabwe

Methodological and technical issues in technology transfer : a special report of the IPCC working group III

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

Metz, B.; Davidson, O.R.; McGrory, L.V.W. (eds.)

ECN-P--00-008

Petten : ECN, December 2000. – 466 p.

Keywords: Climate change; Technology transfer

Milieukosten van genomen besparingsmaatregelen

Boonekamp, P.G.M.; Dril, A.W.N. van; Jeeninga, H.; Menkveld, M.; Arkel, W.G. van
ECN-C--00-045

Petten : ECN, March 2000. – 95 p.

Keywords: Environmental policy; Energy policy; Cost benefit analysis; Netherlands; Energy conservation; Households; Service sector; Calculation methods; Industry; Sectoral analysis; Agriculture; Data analysis; Renewable energy sources; Appliances; Cogeneration; Financial incentives; Buildings; Payback period

Modelling the role of transmission companies in the downstream European gas market

Boots, M.G.; Rijkers, F.A.M.

ECN-RX--00-025

Petten : ECN, July 2000. – 25 p.

Keywords: Gas utilities; Market; G codes; Prices; Natural gas distribution systems; Tariffs; Competition; Vertical integration; Nonlinear programming; Western europe; Optimization; Households; Industry; Power generation

Mogelijke effecten van NOx-beleid op het warmtekrachtpotentieel : een analyse van de invloed van bestrijdingskosten op de rentabiliteit van warmtekracht

Kroon, P.; Rijkers, F.A.M.; Beeldman, M.

ECN-C--00-111

Petten : ECN, December 2000. – 50 p.

Keywords: Cogeneration; Nitrogen oxides; Environmental policy; Netherlands; Cost; Capacity; Economic impact; Internal combustion engines; Emission; Data analysis; Sensitivity analysis; Flue gas; Purification; Forecasting; Selective catalytic reduction; Investment

Monitoring energy efficiency indicators in the Netherlands in 1999 : Dutch contribution to the project 'Cross country comparison on energy efficiency - Phase 5'

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

ECN-C--00-053

Petten : ECN, May 2000. – 74 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

Optimale energie-infrastructuur voor de nieuwbouwlocatie Bongerd/Zijkanaal I in Amsterdam-Noord

Menkveld, M.; Ruijg, G.J.

ECN-C--00-064

Petten : ECN, May 2000. – 23 p.

Keywords: Energy conservation; Houses; Netherlands; Urban areas; Heat distribution systems; Cost estimation; Cogeneration; Heat pumps; Energy efficiency standards; Energy efficiency; Natural gas distribution systems; Water heaters; Investment; Energy consumption; Environmental impacts

Options for design of tradable green certificate systems

Schaeffer, G.J.; Boots, M.G. (ECN, Petten (Netherlands));
 Mitchell, C.; University of Sussex. Science and Technology Policy Research [SPRU], Brighton
 (UK); Timpe, C.; Cames, M. (Oeko-Institut); Anderson, T.
 ECN-C--00-032

Petten : ECN, March 2000. – 88 p.

Keywords: Greenhouse gases; Air pollution abatement; Renewable energy sources; Market;
 Trade; Certification; European union; Implementation; Emission; Financial incentives; Bilat-
 eral agreements; Compliance; Cost; Administrative procedures; Environmental policy; Climatic
 change; Recommendations

**Potentiële en kosten van broeikasgasreductie in binnen- en buitenland : een samenvattende
 analyse**

Linden, N.H. van der; Ybema, J.R.; Beeldman, M.; Rooijen, S.N.M. van
 ECN-C--00-015

Petten : ECN, March 2000. – 23 p.

Keywords: Greenhouse gases; Air pollution abatement; Cost estimation; Netherlands; Envi-
 ronmental policy; Economics; Eastern europe; Developing countries; Carbon dioxide; Supply
 and demand; Implementation; Comparative evaluations; Data analysis; Emission; Mathematical
 models

**Project definition and introduction to some key concepts and issues : the joint CICERO-ECN
 project on sharing the burden of greenhouse gas reduction among countries [CICERO-WP-
 1999:12]**

Ybema, J.R.; Jansen, J.C.; Ormel, F.
 ECN-C--00-010

Petten : ECN, February 2000. – 16 p.

Keywords: Greenhouse gases; Emission; Mitigation; Air pollution abatement; Data analysis;
 Sectoral analysis; Cost estimation; Population density; Energy consumption; Regional analysis;
 Carbon dioxide; Methane; Nitrous oxide; Organic halogen compounds; Sulfur fluorides; Pollution
 sources; Negotiation

**Synergie in de aanpak van klimaatverandering en verzuring : oplossingsrichtingen voor
 energie en mobiliteit in 2030. Achtergrondrapport bij de vijfde Nationale Milieuverkenning
 ter voorbereiding op het vierde Nationaal Milieubeleidsplan**

Beeldman, M. (ECN, Petten (Netherlands));
 Wijngaart, R. van den (Rijksinstituut voor Volksgezondheid en Milieu [RIVM])
 ECN-C--00-074

Petten : ECN, July 2000. – 39 p.

Keywords: Netherlands; Climatic change; Acidification; Environmental policy; Energy conser-
 vation; Transport; Carbon dioxide; Energy consumption; Renewable energy sources; Nuclear
 energy; Nitrogen oxides; Volatile matter; Sulfur dioxide; Particulates; Economic impact; Atti-
 tudes; Energy efficiency; Cost estimation

**Synergy in the approach to climate change and acidification : perspectives for energy and
 mobility in the Netherlands in 2030. Background report to the fifth National Environmental
 Outlook and the Netherlands fourth National Environmental Policy Plan**

Beeldman, M.
 ECN-C--00-106

Petten : ECN, November 2000. – 38 p.

Keywords: Climate change; Mobility; Energy Policy

Technology dynamics in energy systems models with perfect foresight

Kram, T.; Seebregts, A.J.; Schaeffer, G.J. (ECN, Petten (Netherlands));
Barreto, L.; Kypreos, S. (Paul Scherrer Institute, Villigen (Switzerland)); Messner, S.; Schratten-
holzer, L. (IIASA, Laxenburg (Austria))
ECN-RX--00-041

Petten : ECN, March 2000. – 17 p.

Keywords: Energy models; Systems analysis; Methodology; Endogenous technological learning

Toekomst warmtekrachtkoppeling : actualisatie betreffende tarieven DTe en REB

Dril, A.W.N. van; Rijkers, F.A.M.; Battjes, J.J.
ECN-C--00-022

Petten : ECN, February 2000. – 14 p.

Keywords: Cogeneration; Netherlands; Competition; Market; Tariffs; Energy policy; Prices; Taxes

Towards a streamlined CDM process for solar home systems : case studies in selcted countries

Ybema, J.R.
ECN-C--00-110

Petten : ECN, November 2000. – 73 p.

Keywords: Solar; Argentina; Honduras; India; Indonesia; Nepal; Republic of south africa

Towards a streamlined CDM process for solar home systems : emission reductions from implemented systems and development of standardised baselines

Ybema, J.R.; Cloin, J.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));
Hunt, A.C. (IT Power); Kaufman, S.L. (Sunrise Technologies consulting)
ECN-C--00-109

Petten : ECN, November 2000. – 32 p.

Keywords: Emission; Carbon dioxide; Comparative evaluations; Calculation methods; Houses; Solar equipment; Air pollution abatement; Standardization; Developing countries; Performance testing

Vernieuwende concepten voor lokale duurzame energiesystemen : eindverslag

Woude, R.R. van der; Groot, A. de; Ruijg, G.J.; Noord, M. de; Lako, P.; Gilijamse, W.; Boer, B.J. de; Jong, M.J.M.
ECN-C--00-018

Petten : ECN, January 2000. – 94 p.

Keywords: Renewable energy sources; Energy supplies; Energy demand; Urban areas; Energy systems; Residential sector; Netherlands; Energy conservation; Households; Data compilation; Systems analysis; Energy consumption; Space heating; Houses; Energy conversion; Cost estimation

Warmtepompen en zonneboilers in de stad van de zon: financiering en rendabiliteit

Scheepers, M.J.J.; Raad, A. de
ECN-C--00-070

Petten : ECN, July 2000. – 33 p.

Keywords: Financing; Houses; Heat pumps; Solar water heaters; Cost; Investment; Energy demand; Water heating; Space heating; Comparative evaluations; Financial incentives; Cost benefit analysis

2.3 ECN Biomass

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Biomass cofiring potential and experiences in the Netherlands

Ree, R. van; Korbee, R.; Lange, T.J. de

ECN-RX--00-035

Petten : ECN, November 2000. – 18 p.

Keywords:

Biomass for energy and industry: ECN contributions to the 1st world conference and exhibition on biomass for energy and industry

ECN-RX--00-007

Petten : ECN, June 2000. – 41 p.

Keywords: Tar; Standardization; Organic compounds; Biomass; Producer gas; International agreements; Abundance

Commercialisation BIVKIN-based gasification technology: non-confidential version

Drift, A. van der (ECN, Petten (Netherlands));

Kant, H.F. de (HoSt [Holec Projects/Stork Ketels] (Hengelo)); Rajani, J.B. (Shell Renewables)

ECN-C--00-080

Petten : ECN, August 2000. – 56 p.

Keywords: Biomass; Gasification; Commercialization; Systems analysis; Cost; Technology assessment; Packed beds; Fluidized beds; Market; Energy efficiency; Investment; Cogeneration; Tar; Comparative evaluations

Contributions ECN Biomass to 'Developments in thermochemical biomass conversion' conference: 17-22 September 2000, Tyrol, Austria

Boerrigter, H.; Daey Ouwens, C.; Doorn, J. van; Drift, A. van der; Hofmans, H.; Huijnen, H.; Kersten, S.R.A.; Kiel, J.H.A.; Moonen, R.H.W.; Mozaffarian, M.; Neeft, J.P.A.; Oosting, T.P.; Uil, H. den; Visser, H.J.M.; Zwart, R.W.R.

ECN-RX--00-026

Petten : ECN, July 2000. – 87 p.

Keywords: Biomass; Wastes; Power generation; Heat; Liquid fuels; Production; Energy efficiency; Gasification; Fischer-tropsch synthesis; Electricity; Diesel fuels; Cost; Catalysts

Fotobioreactortechnologie voor algenteelt

Doorn, J. van

ECN-B--00-002

Petten : ECN, February 2000. – 2 p.

Keywords:

GASREIP: GASREIniging en Prime mover design: fase A: realisatie en beproeving van een basisconfiguratie ten behoeve van biomassa warmte-kracht koppeling

Dinkelbach, L.; Meijden, C.M. van der (ECN, Petten (Netherlands));

Brenneisen, L.M.; Strating, S.D. (HoSt [Holec Projects/Stork Ketels] (Hengelo)); Geleijn, M.; Wubbe, R. (ABB (Aalsmeer))

ECN-C--00-084

Petten : ECN, August 2000. – 32 p.

Keywords: Biomass; Purification; Waste water; Gasification; Producer gas; Bench-scale experiments; Performance testing; Cleaning; Tar; Dusts; Ammonia; Fluidized beds; Systems analysis; Cogeneration

Implementation of thermal processes for feedstock recycling of bromine and antimony, with energy recovery, from plastics Waste of Electrical and Electronic Equipment (WEEE): Phase 1: literature survey/status update, evaluation, and ranking of combustion, gasification, and pyrolysis based technologies

Boerrigter, H.

ECN-C--00-114

Petten : ECN, November 2000. – 68 p.

Keywords: Bromine; Electronic equipment; Electrical equipment; Recycling; Solid wastes; Plastics; Combustion; Gasification; Pyrolysis; Comparative evaluations; Energy recovery; Antimony; Energy efficiency; Materials recovery; Emission; Cost benefit analysis

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

Marktkansen voor brandstofcellen in bedrijfsvoertuigen, deel 1 : beleid

Bos, A.J.M.; Bosch, A. van den; Mallant, R.K.A.M.

ECN-C--00-033

Petten : ECN, February 2000. – 64 p.

Keywords: Buses; Market; Netherlands; Feasibility studies; Solid electrolyte fuel cells; Performance; Cost; Hydrogen fuels; Nickel-cadmium batteries; Trucks; Vans; Hybrid electric-powered vehicles; Diesel engines; Natural gas; Liquefied petroleum gases; Nitrogen oxides; Emission; Comparative evaluations; Government policies; Carbon dioxide; Particulates; Volatile matter; Carbon monoxide; Sulfur dioxide

Mee-/bijstookpotentieel biomassa in kolencentrales en aardgas-gestookte installaties: bepaling van de milieutechnische- en financieel-economische haalbaarheid

Ree, R. van; Korbee, R.; Eenkhoorn, S.; Lange, T.J. de; Groenendaal, B.J.

ECN-C--00-103

Petten : ECN, November 2000. – 176 p.

Keywords: Netherlands; Fossil-fuel power plants; Biomass; Cocombustion; Availability; Carbon dioxide; Emission; Feasibility studies; Systems analysis; Gasification; Pyrolysis; Environmental impacts; Cost benefit analysis; Wastes; Classification

Multipurpose thermal converter 'WOB'

Drift, A. van der

ECN-B--00-019

Petten : ECN, May 2000. – 2 p.

Keywords:

Photobioreactor technology for microalga cultivation

Doorn, J. van

ECN-B--00-007

Petten : ECN, April 2000. – p.

Keywords:

Production of substitute natural gas by biomass hydrogasification

Mozaffarian, M.; Zwart, R.W.R.

ECN-RX--00-038

Petten : ECN, November 2000. – 15 p.

Keywords: High btu gas; Biomass; Hygas process; Gasification; Hydrogen storage; Thermodynamics; Energy efficiency; Hydrogen production; Chemical composition

Pryomaat

Doorn, J. van

ECN-B--00-017

Petten : ECN, May 2000. – 2 p.

Keywords:

Pyromaat

Doorn, J. van

ECN-B--00-018

Petten : ECN, May 2000. – 2 p.

Keywords:

Restgassen in Nederland : huidige toepassingen en alternatieve energiebesparende toepassingsmogelijkheden

Ree, R. van; Ouden, A.C.B. den; Korobitsyn, M.A.; Dijkstra, J.W.; Mozaffarian, M.

ECN-C--99-066

Petten : ECN, December 2000. – 81 p.

Keywords:

Statistische verwerking meetgegevens en verbetering opstelling PV-combi

Engelen, R.P.J.

ECN-I--01-008

Petten : ECN, August 2000. – 32 p.

Keywords: Meetgegevens; PV-combi

Stookgasreiniging : een overzicht van kennis en faciliteiten bij ECN

Neeft, J.P.A.

ECN-C--00-023

Petten : ECN, March 2000. – 16 p.

Keywords: Fuel gas; Purification; Ecn; Cleaning; Gasification; Biomass; Coal gasification; Dehalogenation; Desulfurization; Removal; Dusts; Alkali metals; Tar; Ammonia; Hydrocyanic acid; Test facilities; Bench-scale experiments

Teren uit pyrolyse en vergassing van biomassa en reststromen: definities, vorming, eigenschappen, bemonstering en analyse

Neeft, J.P.A.

ECN-C--99-102

Petten : ECN, January 2000. – 67 p.

Keywords: Biomass; Wastes; Pyrolysis; Gasification; Sampling; Chemical analysis; Tar; Chemical properties; Physical properties; Chemical composition; Multi-element analysis; Combustion kinetics; Enthalpy; Viscosity; Density; H v; Ph value; Sample preparation

Thermochemical conversion of willow from short rotation forestry

Dinkelbach, L.

ECN-C--00-028

Petten : ECN, February 2000. – 21 p.

Keywords: Thermochemical processes; Willows; Short rotation cultivation; Combustion; Gasification; Pyrolysis; Comparative evaluations

2.4 ECN Energy Efficiency

A workbench in support of energy management services

Warmer, C.J.; Jehee, J.N.T.; Kamphuis, I.G.

ECN-RX--00-031

Petten : ECN, October 2000. – 21 p.

Keywords: Energy management; Thermal comfort; Commercial buildings; Energy management systems; Data analysis; Energy consumption; Load analysis; Energy conservation

Advanced forming techniques in ceramics

Rak, Z.S.

ECN-RX--00-003

Petten : ECN, May 2000. – 18 p.

Keywords: Ceramics; Materials working; Cost; Slip casting; Casting; Molding; Powder metallurgy; Flocculation; Comparative evaluations

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Cf/SiC composites by a novel manufacturing method

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

ECN-RX--00-040

Petten : ECN, December 2000. – 21 p.

Keywords: Carbon fibre; Composite material; Pressure infiltration method

Deliverable D5 : state of the art and initial analysis of PLC services

Kamphuis, I.G.; Warmer, C.J. (ECN, Petten (Netherlands));

Ottoson, H.; Lindell, G.; Sweet, P. (EnerSearch); Akkermans, H. (AKMC, Amsterdam (Netherlands)); Dickinson, J.; Hines, D.; Nicholson, P. (Electricom)

ECN-C--00-092

Petten : ECN, June 2000. – 59 p.

Keywords: Communications; Public utilities; Data transmission systems; Technology assessment; Operating cost; Electronic equipment; Energy management systems; Computer networks; Office buildings; Residential buildings; Internet; Remote control; Reviews; Market; Telemetry

Duurzame bedrijventerreinen: stand van zaken Programma EE 1999

Nauta, J.P.

ECN-I--00-003

Petten : ECN, February 2000. – 38 p.

Keywords: Energy efficiency; Industry; Energy parks; Netherlands; Program management; Ecn; Evaluation; Systems analysis; Recommendations; Coordinated research programs

Energetisch ketenbeheer: indirecte energie-effecten als gevolg van productverbeteringen

Kiesewetter, J.; Dril, A.W.N. van

ECN-I--00-004

Petten : ECN, February 2000. – 68 p.

Keywords: Energy analysis; Energy consumption; Material substitution; Service life; Energy efficiency; Production; Process control; Calculation methods

Energieverbruik in openbare verlichting en verkeersregelininstallaties : eindrapport verkeers-regel-installaties

Veltman, A.T. (ECN, Petten (Netherlands));

Fernhout, J.T. (Adviesbureau Fernhout voor Elektrotechniek en Energie FEE)

ECN-C--00-025

Petten : ECN, July 2000. – 31 p.

Keywords: Light bulbs; Control systems; Lighting systems; Energy consumption; Netherlands; Light emitting diodes; Service life; Energy efficiency; Maintenance; Energy conservation; Payback period; Switching circuits

Energieverbruik in openbare verlichting en verkeersregelininstallaties : eindrapportage openbare verlichting

Bremmers, P.; Veltman, A.T. (ECN, Petten (Netherlands));

Fernhout, J.T. (Adviesbureau Fernhout voor Elektrotechniek en Energie FEE)

ECN-C--00-095

Petten : ECN, October 2000. – 24 p.

Keywords: Light bulbs; Control systems; Lighting systems; Energy consumption; Netherlands; Light emitting diodes; Service life; Energy efficiency; Maintenance; Energy conservation; Payback period; Switching circuits

Energiezorg binnen ECN : organisatorische inbedding van energiezorg in het managementsysteem

Smit, M.

ECN--00-002

Petten : ECN, August 2000. – 90 p.

Keywords: Energieverbruik; Managementsysteem

Extrusion of electroceramics

Rak, Z.S.; Snijders, G.

ECN-I--00-005

Petten : ECN, March 2000. – 17 p.

Keywords: Extrusion; Solid electrolyte fuel cells; Composite materials; Binders; Cellulose esters; Water; Nickel oxides; Zirconium oxides; Chemical preparation; Rolling; Sintering; Drying; Casting; Ceramics

Inventarisatie energiegebruik bij ECN gebouwen (ECN-019)

Edse, B.

ECN--00-001

Petten : ECN, July 2000. – 123 p.

Keywords: Commercial buildings; Energy consumption; Data

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

Koude plasmadepositie voor het aanbrengen van deklagen: een verkennende studie

Schuring, E.W.; Correia, L.A.

ECN-C--00-021

Petten : ECN, February 2000. – 29 p.

Keywords: Cold plasma; Coatings; Destructive testing; Aluminium; Thickness; Corrosion; Anodization; Microstructure; Aluminium oxides; Substrates; Multi-element analysis

LCA spoiler voor transportvoertuigen : glas- of natuurvezelbasis?

Overbeek, J.P.

ECN-C--00-004

Petten : ECN, February 2000. – 72 p.

Keywords: BIOLICHT; LCA; Transport

LCC-studie spoilers voor transportvoertuigen: BIOLICHT project

Overbeek, J.P.

ECN-C--00-123

Petten : ECN, December 2000. – 47 p.

Keywords: Vehicles; Transportation sector; Data compilation; Service life; Reinforced plastics; Composite materials; Cost; Manufacturing; Fibers

Materiaalselectie onderzoek voor ECO-II van de Gemeentelijke Afvalverwerking Amsterdam (GDA)

Strijk, G.G.J.; Schuring, E.W.

ECN-C--00-113

Petten : ECN, November 2000. – 59 p.

Keywords: Teflon; Waste processing plants; Heat exchangers; Iron base alloys; Nickel base alloys; Silicon carbides; Aluminium oxides; Graphite; Molybdenum alloys; Stainless steel-316L; Enamels; Corrosion; Materials testing; Pitting corrosion; Crevice corrosion

Metallographic characterisation of EUROFER97 plate and bar materials

Schuring, E.W.; Hofmans, H.E.

ECN-C--00-108

Petten : ECN, October 2000. – 22 p.

Keywords: Metallography; Plates; Microstructure; Hardness; Chromium steels; Scanning electron microscopy; Martensitic steels; Grain size; Austenitic steels; Segregation; Tantalum; Titanium; Carbides; Sampling; Inclusions; Impurities; Chemical composition; Heat treatments; Certification

Monitoring aluminium lekverliezen 1998

Nauta, J.P.

ECN-C--00-121

Petten : ECN, December 2000. – 29 p.

Keywords: Aluminium; Leaks; Netherlands; Monitoring; Pollution sources; Industrial wastes; Scrap metals; Solid wastes

Monitoring protocol 'aluminium lekverliezen'

Nauta, J.P.

ECN-C--00-120

Petten : ECN, December 2000. – 39 p.

Keywords: Aluminium; Leaks; Netherlands; Monitoring; Pollution sources; Industrial wastes; Scrap metals; Solid wastes; Data acquisition; Quality control; Waste disposal; Data compilation

Off-gas treatment system : feasibility study for Nitta Corporation of Holland B.V.

Selow, E.R. van; Luijten, G.B.

ECN-C--00-068

Petten : ECN, June 2000. – 32 p.

Keywords: Volatile matter; Off-gas systems; Air pollution abatement; Surface coating; Belt conveyors; Cost estimation; Radiant heaters; Infrared radiation; Ceramics; Incinerators; Comparative evaluations

Optimale regelstrategie voor een microfiltratie-membraaninstallatie : experimenten en procesmodel DWT-installatie

Oud, C.; Oudendijk, S.

ECN-I--00-001

Petten : ECN, January 2000. – 195 p.

Keywords: Membranes; Process control; Filtration; Energy efficiency; Waste processing; Water treatment; Pressure dependence; Simulation; Fouling; Crossflow systems; Functional models; Gels; Precipitation; Energy consumption; Experimental data; Theoretical data; Data analysis; Optimization

PROMON: dynamische procesmonitoring in de procesindustrie

Jehee, J.N.T.; Kamphuis, I.G.; Kok, J.K.; Selow, E.R. van; Verduijn, B.

ECN-R--00-002

Petten : ECN, December 2000. – 83 p.

Keywords: Asphalts; Production; Solar cells; Manufacturing; Energy efficiency; Process control; Data acquisition; Data processing; Data analysis; Data compilation

Verwerkingstechnieken voor spoilers van glas- en natuurvezel versterkte kunststoffen

Overbeek, J.P.

ECN-C--00-069

Petten : ECN, June 2000. – 28 p.

Keywords: Vehicles; Fiberglass; Service life; Fibers; Environmental impacts; Fuel consumption; Comparative evaluations; Resins; Materials handling; Processing; Pyrolysis; Gasification; Waste processing; Cement industry

2.5 ECN Clean Fossil Fuels

A phenomenological model of water transport in a proton-exchange-membrane fuel cell

Janssen, G.J.M.

ECN-RX--00-032

Petten : ECN, October 2000. – 46 p.

Keywords:

Analyse van de stikstofproblematiek in Nederland : een eerste verkenning

Erismann, J.W.; Vries, W. de; Kros, J. (ECN, Petten (Netherlands));

Oenema, O. (Alterra, Research Instituut voor de groene ruimte (Wageningen)); Eerden, L.J. van der (Plant Research International (Wageningen)); Zeijts, H. van (Centrum voor Landbouw en Milieu [CLM])

ECN-C--00-040

Petten : ECN, March 2000. – 69 p.

Keywords: Netherlands; Nitrogen; Data analysis; Environmental effects; Environmental policy; Emission; Agriculture; Industry; Vehicles; Land pollution abatement; Evaluation; Nitrogen cycle

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Application of sustainable energy on the island of Bonaire. Phase 1 : inventory of sustainable energy options

Weeda, M.; Dinkelbach, L.; Dijk, A.L. van; Ligthart, F.A.T.M.; Pierik, J.T.G.; Jochems, A.; Versteeg, A.J.

ECN-I--00-002

Petten : ECN, December 2000. – 62 p.

Keywords: Islands; Renewable energy sources; Energy policy; Diesel engines; Electric generators; Energy conservation; Wind turbines; Photovoltaic power supplies; Solar collectors; Energy supplies; Technology assessment

Assessment of carbon-rejection processes as a method of CO₂ abatement: IEA Greenhouse Gas R&D Programme United Kingdom

Lugten, P.E.; Jansen, D.; Burgt, M.J. van der; Carp, A.

ECN-C--00-035

Petten : ECN, June 2000. – 47 p.

Keywords: Air pollution abatement; Carbon dioxide; Emission; Carbon black; Coke; Methanol; Methane; Pyrolysis; Hydrogen production; Power generation; Fossil fuels; Metallurgy; Market; Economics; Economic analysis; Sensitivity analysis

Biomass for energy and industry: ECN contributions to the 1st world conference and exhibition on biomass for energy and industry

ECN-RX--00-007

Petten : ECN, June 2000. – 41 p.

Keywords: Tar; Standardization; Organic compounds; Biomass; Producer gas; International agreements; Abundance

Characterisation of particulate matter in urban air: instrumentation development and experimental results

Khlystov, A.; Weijers, E.P.; Kos, G.P.A.; Bulk, W.C.M. van den; Even, A.; Brink, H.M. ten; Erisman, J.W.

ECN-R--00-001

Petten : ECN, April 2000. – 47 p.

Keywords: Particulates; Air quality; Emission; Urban areas; Public health; Sampling; Quantitative chemical analysis; Air pollution; Aerosols; Road transport; Air samplers; Exhaust gases; Temperature dependence; Accuracy; Aerosol monitoring; Microbalances; Ammonium nitrates; Soot; Dynamometers

Crystalline silicon growth on silicon nitride and oxynitride substrates for thin film solar cells

Gutjahr, A.; Grasso, C.; Schiermeier, S.E.A.; Keitz, A. von; Fung, P.F.

ECN-RX--00-013

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon; Silicon solar cells; Crystal growth; Silicon nitrides; Substrates; Liquid phase epitaxy; Sintering; Casting; P-type conductors; Gadolinium; Aluminium; Doped materials; Grain size; Layers

De vliegende geest : ammoniak uit de landbouw en de gevolgen voor de natuur

Erisman, J.W.

ECN-P--00-006

Petten : ECN, December 2000. – 271 p.

Keywords: Ammoniak; Landbouw

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

Comans, R.N.J.

ECN-C--00-094

Petten : ECN, December 2000. – 80 p.

Keywords:

Direct catalytic decomposition and hydrocarbon-assisted catalytic reduction of N₂O in the nitric acid industry

Brink, R.W. van den; Verhaak, M.J.F.M. (ECN, Petten (Netherlands));

Gent, M.M.C.; Smit, A.W. (Jacobs Comprimio Nederland)

ECN-C--00-087

Petten : ECN, November 2000. – 31 p.

Keywords: Nitrous oxide; Climatic change; Greenhouse gases; Catalysis; Feasibility studies; Netherlands; Selective catalytic reduction; Propane; Nitric acid; Catalysts; Carbon dioxide

Estimations of the background concentrations of PM10 and sulphate on the Northern Hemisphere

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

Schaap, M. (IMAU (Utrecht, The Netherlands))

ECN-C--00-039

Petten : ECN, March 2000. – 29 p.

Keywords: PM10; Sulphur; Sulphate; PM2.5; Background concentrations; Aerosol; Northern Hemisphere

Evaluatie van de gevolgen van aanpassing van de pH van de uitloogvloeistof in de uitloognormen NEN 7343, 7345 en 7349

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

Mulder, E. (TNO. Milieu, Energie en Procesinnovatie [TNO-MEP])

ECN-C--00-081

Petten : ECN, August 2000. – 27 p.

Keywords: Leachates; Leaching; Standardization; Ph value; Building materials; Wastes; Slags; Ashes; Chemical analysis; Comparative evaluations; Standards

Evaluatie van de methaanemissie van de deponie Braambergen

Hensen, A.

ECN-C--00-006

Petten : ECN, January 2000. – 33 p.

Keywords: Methane; Municipal wastes; Plumes; Netherlands; Emission; Waste disposal; Solid state lasers; Absorption; Nitrous oxide; Carbon dioxide; Cdte semiconductor detectors; Meteorology; Computer calculations; Experimental data

Evaluation of leaching behaviour of selected wastes designated as hazardous by means of basic characterisation tests

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

ECN-C--00-050

Petten : ECN, August 2000. – 155 p.

Keywords: Evaluation; Leaching; Wastes; Characterization

Final report: Novem contract no. 219.401-0012 : SOFC as a gas separator

Korobitsyn, M.A.; Berkel, F.P.F. van; Christie, G.M.

ECN-C--00-122

Petten : ECN, December 2000. – 63 p.

Keywords:

Gas en brandstof analyse

Bakker, F.P.

ECN-B--00-009

Petten : ECN, April 2000. – 2 p.

Keywords:

Het energieke wegdek : inventarisatie van duurzame mogelijkheden van energieopwekking langs de snelweg

Weijers, E.P.; Hensen, A.; Erisman, J.W.; Wilde, H.P.J. de; Cnubben., P.C.

ECN-C--00-118

Petten : ECN, December 2000. – 56 p.

Keywords: Energieopwekking; Snelweg; Wegdek; Duurzame energie; Foto-voltaïsche systemen; PV-systemen; Geluidsschermen; Warmtewisselaars; Biomassa; Windenergie; Piëzo-elektriciteit; Peltier; Pavements; Roads; Photovoltaic power supplies; Heat exchangers; Biomass; Wind turbines; Piezoelectricity; Dielectric materials; Biomass conversion plants

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

Karakterisering organische stof: haalbaarheidsstudie naar genormaliseerde methoden voor de bepaling van de beschikbaarheid en rol van organische stof in grond, afval- en bouwstoffen m.b.t. verhoging van de uitloging van slecht water-oplosbare verontreinigingen

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

Filius, J. (Landbouwniversiteit Wageningen)

ECN-C--00-060

Petten : ECN, April 2000. – 82 p.

Keywords: Organic matter; Soils; Wastes; Leaching; Polycyclic aromatic hydrocarbons; Polychlorinated biphenyls; Metals; Pollutants; Aqueous solutions; Standardization; Extraction; Fractionation; Decomposition; Chemical composition; Quantitative chemical analysis

Katalytische N2O-verwijdering in de saltpeterzuurindustrie : managment samenvatting = Catalytic destruction of N2O in the nitric acid industry: executive summary

Brink, R.W. van den; Verhaak, M.J.F.M. (ECN, Petten (Netherlands));

Lijssel, J.W.N. van; Gent, M.M.C. (Stork Engineering Consultancy)

ECN-C--00-003

Petten : ECN, January 2000. – 19 p.

Keywords: Nitrous oxide; Climatic change; Greenhouse gases; Catalysis; Feasibility studies; Netherlands; Selective catalytic reduction; Propane; Nitric acid; Catalysts; Carbon dioxide

Marktkansen voor brandstofcellen in bedrijfsvoertuigen, deel 1 : beleid

Bos, A.J.M.; Bosch, A. van den; Mallant, R.K.A.M.

ECN-C--00-033

Petten : ECN, February 2000. – 64 p.

Keywords: Buses; Market; Netherlands; Feasibility studies; Solid electrolyte fuel cells; Performance; Cost; Hydrogen fuels; Nickel-cadmium batteries; Trucks; Vans; Hybrid electric-powered vehicles; Diesel engines; Natural gas; Liquefied petroleum gases; Nitrogen oxides; Emission; Comparative evaluations; Government policies; Carbon dioxide; Particulates; Volatile matter; Carbon monoxide; Sulfur dioxide

Marktkansen voor brandstofcellen in bedrijfsvoertuigen: deel 2: techniek

Snijders, W.; Mallant, R.K.A.M. (ECN, Petten (Netherlands));
 Berkhout, P.D. (Den Oudsten Bussen, Woerden (Netherlands)); Sloetjes, E.W. (STORK Product Engineering, Amsterdam (Netherlands))
 ECN-C--00-034

Petten : ECN, February 2000. – 83 p.

Keywords: Buses; Market; Netherlands; Feasibility studies; Hybrid systems; Solid electrolyte fuel cells; Power density; Performance; Cost; Alkaline electrolyte fuel cells; Hydrogen fuels; Nickel-cadmium batteries; Fuel cells; Reformer processes; Reviews

Methaanemissie van de deponie Nauerna : november 1999

Hensen, A.
 ECN-C--00-056

Petten : ECN, April 2000. – 29 p.

Keywords: Sanitary landfills; Methane; Emission; Netherlands; Plumes; Sampling; Air samplers; Diode-pumped solid state lasers; Meteorology; Calibration; Nitrous oxide

NH₃ flux measurements at Schagerbrug and Oostvaardersplassen, the Dutch contribution to the GRAMINAE experiment

Mosquera, J.; Hensen, A.; Bulk, W.C.M. van den; Vermeulen, A.T.; Erisman, J.W.; Möls, J.J.
 ECN-C--00-079

Petten : ECN, July 2000. – 53 p.

Keywords: Netherlands; Ammonia; Daily variations; Seasonal variations; Deposition; Gramineae; Rangelands; Air-biosphere interactions; Emission; Land use; Concentration ratio; Wetlands

Op zoek naar onbekende bronnen van broeikasgassen

Hensen, A.
 ECN-C--00-112

Petten : ECN, November 2000. – 49 p.

Keywords: Greenhouse gases; Pollution sources; Carbon dioxide; Methane; Nitrous oxide; Chlorofluorocarbons; Sulfur fluorides; Fluorinated aliphatic hydrocarbons; Air pollution monitoring; Air pollution monitors; Air samplers; Data analysis; Netherlands

Optimale energie-infrastructuur voor de nieuwbouwlocatie Bongerd/Zijkanaal I in Amsterdam-Noord

Menkveld, M.; Ruijg, G.J.
 ECN-C--00-064

Petten : ECN, May 2000. – 23 p.

Keywords: Energy conservation; Houses; Netherlands; Urban areas; Heat distribution systems; Cost estimation; Cogeneration; Heat pumps; Energy efficiency standards; Energy efficiency; Natural gas distribution systems; Water heaters; Investment; Energy consumption; Environmental impacts

PRODESig: a program for optimisation and dimensioning of energy conversion systems

Ouden, A.C.B. den

ECN-RX--00-024

Petten : ECN, June 2000. – 13 p.

Keywords: Energy conversion; Optimization; Size; Direct energy converters; Carbon dioxide; Total energy systems; Energy consumption; Systems analysis; Linear programming; Energy demand; Supply and demand; P codes

Review of the pan-European monitoring programme on forest ecosystems

Erisman, J.W.

ECN-C--00-071

Petten : ECN, July 2000. – 43 p.

Keywords: Forests; Monitoring; Europe; Terrestrial ecosystems; Reviews; Air pollution monitoring; International cooperation; Evaluation; Environmental policy; European union; Legislation; Pollution regulations; Recommendations

Sampling of PM10 at high relative humidity

Brink, H.M. ten

ECN-C--00-061

Petten : ECN, April 2000. – 17 p.

Keywords: Particulates; Sampling; Air samplers; Aerosols; Water; Netherlands; Ammonium sulfates; Ammonium nitrates; Fog; Humidity; Hygroscopicity; Salts; Droplets

Schatting van de bijdrage van secundair organisch materiaal aan PM10

Even, A.; Brink, H.M. ten

ECN-C--00-038

Petten : ECN, March 2000. – 25 p.

Keywords: Netherlands; Air pollution; Aerosols; Organic matter; Particulates; Data analysis; Carbon; Urban areas; Rural areas; Seasonal variations; Data covariances; Pollution sources

Status of SOFC component development at ECN

Rietveld, G.; Nammensma, P.; Ouweltjes, J.P.; Siewers, E.J.

ECN-RX--00-037

Petten : ECN, October 2000. – 7 p.

Keywords: Anodes; Solid electrolyte fuel cells; Solid electrolytes; Ceramics; Manufacturing; Casting; Screen printing; Performance; Cost; Bending; Coordinated research programs

Status of anode supported-thin electrolyte ceramic SOFC component development at ECN

Christie, G.M.; Nammensma, P.; Huijsmans, J.P.P.

ECN-RX--00-036

Petten : ECN, October 2000. – 9 p.

Keywords: Anodes; Solid electrolyte fuel cells; Solid electrolytes; Ceramics; Manufacturing; Casting; Screen printing; Performance; Cost; Bending; Coordinated research programs

Stirling based micro co-generation system for single households

Ribberink, J.S.; Zutt, J.G.M.; Rabou, L.P.L.M.; Beckers, G.J.J.; Baijens, C.A.W.; Lutikholt, J.J.M.

ECN-RX--00-004

Petten : ECN, April 2000. – 9 p.

Keywords: Stirling engines; Cogeneration; Households; Space heating; Water heating; Gas burners; Ceramics; Heat transfer; Nitrogen oxides; Emission; Energy efficiency; Design; Performance

The continuous analysis of nitrate and ammonium in aerosols by the Stream Jet Aerosol Collector (SJAC) : extension and validation of the methodology

Slanina, J.; Brink, H.M. ten; Otjes, R.P.; Even, A.; Jongejan, P.A.C.; Khlystov, A.; Waijers-Ijpelaar, A. (ECN, Petten (Netherlands));

Hu, M. (Peking University, Center of Environmental Sciences); Lu, Y. (Iowa State University)

ECN-RX--00-039

Petten : ECN, November 2000. – 28 p.

Keywords: Nitrates; Ammonia; Aerosols; Aerosol monitoring; Air samplers; Validation; Quantitative chemical analysis; Ammonium nitrates; On-line measurement systems; Scavenging; Quality assurance; Quality control; Comparative evaluations; Field tests

Ultrafine particles and carbon from road traffic emissions : a literature study [TNO-MA-161]

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

Keuken, M.P.; TNO. Milieu, Energie en Procesinnovatie [TNO-MEP]

ECN-C--00-037

Petten : ECN, March 2000. – 38 p.

Keywords: Road transport; Emission; Particulates; Public health; Respiratory system diseases; Urban areas; Carbon; Smokes; Particle size; Concentration ratio; Netherlands

Verkennde evaluatie kwaliteitsbeïnvloeding poederkoolvlieg : bijstoken van biomassa in een poederkoolcentrale of bijmenging van biomassa-assen met poederkoolvlieg

Sloot, H.A. van der; Cnubben, P.A.J.P.

ECN-C--00-058

Petten : ECN, August 2000. – 88 p.

Keywords: Fly ash; Ashes; Pulverized fuels; Coal; Evaluation; Quality control; Biomass; Co-combustion; Fossil-fuel power plants; Mixing; Coal gasification; Combustion; Pyrolysis; Agglomeration; Particle size; Building materials; Cements; Leaching; Anions; Flue gas; Metals

Vernieuwende concepten voor lokale duurzame energiesystemen : eindverslag

Woude, R.R. van der; Groot, A. de; Ruijg, G.J.; Noord, M. de; Lako, P.; Gilijamse, W.; Boer, B.J. de; Jong, M.J.M.

ECN-C--00-018

Petten : ECN, January 2000. – 94 p.

Keywords: Renewable energy sources; Energy supplies; Energy demand; Urban areas; Energy systems; Residential sector; Netherlands; Energy conservation; Households; Data compilation; Systems analysis; Energy consumption; Space heating; Houses; Energy conversion; Cost estimation

Visibility study herak : heat recovery

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

Faber, A.J.; Koch, H.J. (TNO-TPD, Delft (Netherlands)); Langreck, J. (Colibri, Vaals (Netherlands)); Marel, H.J. van der; Zuijlen, A.J.H.G. van (JCN, Leiden (Netherlands)) ; Rohn, N. (ABB, Baden (Switzerland))

ECN-C--00-101

Petten : ECN, November 2000. – 56 p.

Keywords: Gas turbines; Waste heat; Feasibility study

Water transport in the proton-exchange-membrane fuel cell: measurements of the effective drag coefficient

Janssen, G.J.M.; Overvelde, M.L.J.

ECN-RX--00-033

Petten : ECN, October 2000. – 33 p.

Keywords:

2.6 ECN Technological Services & Consultancy

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

2.7 ECN Wind Energy

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Contributions to the European seminar 'Offshore wind energy in Mediterranean and other European seas': OWEMES 2000, April 13-14, 2000, Siracuse - Sicily

Hendriks, H.B.; Lindenburg, C.; Engelen, T.G. van; Pierik, J.T.G.; Bulder, B.H.; Heijdra, J.J.

ECN-RX--00-002

Petten : ECN, April 2000. – 45 p.

Keywords: Wind turbine arrays; Offshore sites; Electrical equipment; Electric generators; Cost estimation; Permanent magnets; Speed regulators; Dc systems

ECN-Nieuwbouw op weg naar 0-energie

Ligthart, F.A.T.M.; Kaan, H.F.

ECN-C--00-030

Petten : ECN, February 2000. – 22 p.

Keywords: Office buildings; Energy efficiency; Daylighting; Ventilation; Ecn; Netherlands

European windturbine testing procedure developments SMT 4-CT96-2116 : blade testing methods subtask 2

Bulder, B.H. ; Dam, J.J.D. van

ECN-C--00-055

Petten : ECN, April 2000. – 79 p.

Keywords: Wind energy; Test results

Evaluation of the 9th international course on implementation of wind energy, ECN, April 3-15, 2000

Dekker, J.W.M. (ECN, Petten (Netherlands));

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

ECN-C--00-066

Petten : ECN, July 2000. – 41 p.

Keywords: Education; Educational facilities; Educational tools; Wind power; Implementation; Developing countries; Evaluation; Technology transfer; Scientific personnel

Experience of wind turbine manufacturers with wind turbine certification: report of subtask A1 of project EWTC

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

Nath, C. (Germanischer Lloyd (Hamburg, DE)); Eriksson, C. (DET Norske Veritas (Hoevik, Norway)); Vionis, P. (Centre for Renewable Energy Sources [CRES], (Athens, Greece))

ECN-C--00-024

Petten : ECN, March 2000. – 21 p.

Keywords: Wind turbines; Certification; European union; Manufacturers; Wind power industry; Cost

Full scale testing of a Nedwind NW25 rotor blade

Dam, J.J.D. van

ECN-C--00-057

Petten : ECN, April 2000. – 53 p.

Keywords: Performance testing; Rotors; Fatigue; Strain gages; Amplitudes; Damping; Eigenfrequency; Horizontal axis turbines; Mechanical vibrations

Het functioneren van stralingsbranders in de Grote Sint Laurenskerk in Alkmaar

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

ECN-C--00-031

Petten : ECN, February 2000. – 29 p.

Keywords: Radiation heating; Radiant heaters; Energy efficiency; Public buildings; Space heaters; Performance; Infrared thermography; Temperature measurement; Humidity control; Thermal comfort; Netherlands; Air infiltration; Energy consumption

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

Life-cycle analysis and optimisation of solar home systems : interim report over 1999 of ENGINE project 74513

Dogger, J.D.; Nieuwenhout, F.D.J.; Vervaart, M.R.; Jansen, J.C.; Linden, N.H. van der; Lafleur, M.C.C.; Lasschuit, P.E.

ECN-C--00-047

Petten : ECN, June 2000. – 34 p.

Keywords: Life cycle; Service life; Optimization; Photovoltaic power supplies; Progress report; Systems analysis; Households; Monitoring; Socio-economic factors; Institutional factors; Data acquisition; Performance; Zimbabwe

Ninth international course on the implementation of wind energy

Hulle, F.J.L. van

ECN-B--00-015

Petten : ECN, May 2000. – p.

Keywords:

Normontwikkeling windenergie : een verslag van de werkzaamheden in 1999

Hendriks, H.B.; Dam, J.J.D. van

ECN-C--00-049

Petten : ECN, August 2000. – 222 p.

Keywords: Wind turbines; Standardization; Standards; Safety; Noise pollution control; Performance; Mechanical tests; Static loads; Rotors; Performance testing; Certification; Lightning arresters; Reviews; Regulations; Acoustic monitoring

Offshore wind turbine systems in Europe (Offshore Windkraftanlagen in Europa)

Beurskens, H.J.M.

ECN-RX--00-001

Petten : ECN, January 2000. – 13 p.

Keywords: Wind turbines; Offshore sites; North sea; Reviews; Wind turbine arrays; Research programs; Demonstration programs; Capacity

Offshore wind turbine systems in Europe (Offshore Windkraftanlagen in Europa)

Beurskens, H.J.M.

ECN-RX--00-001

Petten : ECN, January 2000. – 13 p.

Keywords: Wind turbines; Offshore sites; North sea; Reviews; Wind turbine arrays; Research programs; Demonstration programs; Capacity

Optimisation of vortex generator locations. Insects cause double stall. Inviscid stall model. Some thoughts and preliminary results on wake modelling and tip corrections

Corten, G.; Snel, H.

ECN-RX--00-034

Petten : ECN, October 2000. – 43 p.

Keywords:

PHATAS-IV user's manual : Program for Horizontal Axis wind Turbine Analysis and Simulation, version IV

Lindenburg, C.; Hegberg, T.

ECN-C--99-093

Petten : ECN, June 2000. – 135 p.

Keywords: P codes; Horizontal axis turbines; Manuals; Computer program documentation; Dynamic loads; Degrees of freedom; Damping; Aerodynamics; Computerized simulation; Computer calculations; Airfoils

Proefopstelling PV-geïntegreerde zonwering

Kaan, H.F. (ECN, Petten (Netherlands));

Pernot, C.E.E. (Centrum Bouwonderzoek TNO-TUE, Eindhoven)

ECN-C--00-016

Petten : ECN, January 2000. – 18 p.

Keywords: Daylighting; Photovoltaic power supplies; Netherlands; Ecn; Laboratory buildings; Design; Mockup; Performance testing; Sun shades; Computerized simulation

Thin-film solar cells: technology evaluation and perspectives

Bossert, R.H.; Vaan, M.J.M. de ; Tool, C.J.J.; Roosmalen, J.A.M. van; Wentink, C.H.M.

ECN-RX--00-005

Petten : ECN, May 2000. – 58 p.

Keywords: Silicon solar cells; Thin films; Technology assessment; Silicon; Crystal structure; Amorphous state; Netherlands; Evaluation; Payback period; Toxicity; Cost; Copper selenides; Indium selenides; Gallium selenides; Cadmium tellurides; Organic solar cells; Dyes; Copper compounds; Indium sulfides; Gallium sulfides; Copper sulfides; Risk assessment; Comparative evaluations; Photovoltaic power supplies; Deposition; Energy efficiency; Physical properties; Manufacturing

Voorstudie radiale stroming in overtrek

Brand, A.J.; Garrel, A. van; Snel, H. (ECN, Petten (Netherlands));

Rozendal, D.; Houwink, R. (NLR, Amsterdam (Netherlands)); Rooij, R.J.P.O.M. van; Timmer, W.A. (TUD, Delft (Netherlands))

ECN-C--00-002

Petten : ECN, December 2000. – 60 p.

Keywords: Radial flow; Wind turbines

Wij hebben iets te vieren

Beurskens, H.J.M.

ECN-B--00-004

Petten : ECN, February 2000. – p.

Keywords:

2.8 ECN Solar Energy

20 veelgestelde vragen over zonne-energie

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

ECN-P--00-001

Petten : ECN, October 2000. – 8 p.

Keywords: Zonne-energie; Solar energy

A high throughput PECVD reactor for deposition of passivating SiN layers

Soppe, W.J.; Duijvelaar, B.G.; Schiermeier, S.E.A.; Weeber, A.W.; Steiner, A. ; Schuurmans, F.M.

ECN-RX--00-021

Petten : ECN, May 2000. – 4 p.

Keywords: Chemical vapor deposition; Silicon nitrides; Layers; Passivation; Silicon solar cells; Energy efficiency; Charge carriers; Hydrogenation; Microwave heating; Plasma heating; Hydrogen; Silanes; Ammonia

A traffic noise barrier equipped with 2160 AC-modules

Borg, N.J.C.M. van der; Rössler, E. ; Visser, E.B.M.

ECN-RX--00-008

Petten : ECN, May 2000. – 3 p.

Keywords: Photovoltaic power supplies; Ac systems; Roads; Noise pollution control; Inverters; Performance; Energy efficiency; Photovoltaic conversion

Advanced metallization: from present to future

Hoornstra, J.; Bultman, J.H.; Moor, H.H.C. de; Weeber, A.W.; Wyers, G.P.

ECN-RX--00-030

Petten : ECN, September 2000. – 6 p.

Keywords:

Amorphous silicon modules on facades with non-optimal orientations

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

ECN-RX--00-009

Petten : ECN, May 2000. – 3 p.

Keywords: Silicon; Amorphous state; Homojunctions; Silicon solar cells; Monitoring; Performance; Photovoltaic power supplies; Office buildings; Solar radiation; Electric conductivity; Solar cell arrays; Energy efficiency

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

Characterisation of PV modules of new generations : results of tests and simulations

Eikelboom, J.A.; Jansen, M.J.

ECN-C--00-067

Petten : ECN, July 2000. – 20 p.

Keywords: Photovoltaic power supplies; Performance testing; Electronic equipment; Thermodynamic properties; Simulation; Energy yield; Electric conductivity

Contacting and interconnection of CISCuT material

Wienke, J.A.; Brieko, M.W.; Heide, A.S.H. van der; Winkler, M.; Tober, O.; Penndorf, J.

ECN-RX--00-023

Petten : ECN, May 2000. – 4 p.

Keywords: Copper sulfides; Indium sulfides; Copper selenides; Indium selenides; Manufacturing; Electric conductivity; Ultrasonic welding; Soldering

Critical success factors for the large-scale introduction of grid-connected photovoltaic systems : a survey focusing on the non-technical aspects

Groenendaal, B.J.; De Lange, T.J.; Lako, P. ; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J. de

ECN-C--00-086

Petten : ECN, November 2000. – 76 p.

Keywords:

Crystalline silicon growth on silicon nitride and oxynitride substrates for thin film solar cells

Gutjahr, A.; Grasso, C.; Schiermeier, S.E.A.; Keitz, A. von; Fung, P.F.

ECN-RX--00-013

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon; Silicon solar cells; Crystal growth; Silicon nitrides; Substrates; Liquid phase epitaxy; Sintering; Casting; P-type conductors; Gadolinium; Aluminium; Doped materials; Grain size; Layers

De milieu-effecten van verlichtingssystemen in kantoren

Lafleur, M.C.C.; Wentink, C.H.M.

ECN-C--00-104

Petten : ECN, December 2000. – 54 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

De werking van Nederlandse PV-inverters in gebieden met lage netspanning : een voorstudie

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

Groeman, J.F. (KEMA (Arnhem))

ECN-C--00-076

Petten : ECN, August 2000. – 23 p.

Keywords: Inverters; Photovoltaic power supplies; Netherlands; Market; Power distribution systems; Performance; Electric potential; Overvoltage; Electrical transients; Harmonics; Direct current

Deliverable D7 : PLC service business model development and market survey instrument (final version, 29 december 2000). PALAS - Powerline as an Alternative Local AccesS IST-1999-11379

Kamphuis, I.G.; Warmer, C.J. (ECN, Petten (Netherlands));

Sweet, P. (EnerSearch AB, Malmö (Sweden)); Olsson, M. (EnerSearch/Sydskraft Broadband,

Malmö (Sweden)); Akkermans, H. (AKMC, Amsterdam (Netherlands))

ECN-C--01-037

Petten : ECN, December 2000. – 46 p.

Keywords: Data transmission; Data transmission systems; Electric cables; Business; Market; Technology assessment; Competition; Internet; Public utilities; Service sector

Een milieubewuste keuze van verlichtingssystemen voor kantoren : een handreiking voor gebouwbeheerders

Lafleur, M.C.C.; Wentink, C.H.M.

ECN-C--00-102

Petten : ECN, December 2000. – 29 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

Energieprestatie van het kantoorgebouw van bouwbedrijf Noordersluis

Sijpheer, N.C.; Helden, W.G.J. van

ECN-C--00-096

Petten : ECN, November 2000. – 16 p.

Keywords: Office buildings; Energy conservation; Construction; Cost benefit analysis; Energy efficiency; Heat recovery; Cooling systems; Daylighting; Lighting systems; Energy consumption

Energievisie Schalkwijk 2000+

Ligthart, F.A.T.M.; Kaan, H.F.

ECN-C--00-115

Petten : ECN, February 2000. – 53 p.

Keywords: Netherlands; Urban areas; Energy efficiency; Energy policy; Local government; Retrofitting; Houses; Residential buildings; Energy consumption; Office buildings; Shopping centers; Energy conservation

Financing solar home systems: lessons from Swaziland

Lasschuit, P.E.; Westra, C.A.

ECN-RX--00-018

Petten : ECN, May 2000. – 3 p.

Keywords: Swaziland; Photovoltaic power supplies; Houses; Households; Financing; Low income groups; Namibia; Botswana; Financial incentives; Solar energy

Flexible dye-sensitized nanocrystalline TiO₂ solar cells

Sommeling, P.M.; Späth, M.; Kroon, J.M.; Kinderman, R.; Roosmalen, J.A.M. van

ECN-RX--00-020

Petten : ECN, May 2000. – 5 p.

Keywords: Organic solar cells; Titanium oxides; Dyes; Foils; Flexibility; Glass; Substrates; Performance; Fill factors; Electric conductivity

Het toepassen van behoefte-ventilatie in energiezuinige woningen

Römer, J.C.

ECN-RX--00-006

Petten : ECN, November 2000. – 4 p.

Keywords: EPC; Ventilatie

Improved front side metallization on silicon solar cells with stencil printing

Hoornstra, J.; Moor, H.H.C. de; Weeber, A.W.; Wyers, G.P.

ECN-RX--00-016

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon solar cells; Metallurgy; Surface coating; Screen printing; Layers; Comparative evaluations; Line widths

Installatieconcept voor villa's in het Burgemeester Kootpark te Uithoorn: duurzaam comfort

Ligthart, F.A.T.M.; Sijpheer, N.C.

ECN-C--00-072

Petten : ECN, October 2000. – 32 p.

Keywords: Houses; Netherlands; Ground source heat pumps; Seasonal thermal energy storage; Space heating; Installation; Systems analysis; Design; Energy conservation; Investment; Cost; Heat recovery; Water heating; Energy efficiency

Invloed van stedenbouwkundige thema's op de energievisie

Koopmans, B.T.

ECN-C--00-116

Petten : ECN, December 2000. – 112 p.

Keywords: Urban areas; Energy consumption; Energy policy; Local government; Netherlands; Environmental impacts; Energy conservation; Calculation methods; Energy efficiency standards; Comparative evaluations; Road transport; Buildings

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

LPE-deposition of crystalline silicon layers on recrystallised silicon-based ceramics

Tool, C.J.J.; Schiermeier, S.E.A.; Gutjahr, A.; Laas, L.J.; Moor, H.H.C. de

ECN-RX--00-022

Petten : ECN, May 2000. – 3 p.

Keywords: Liquid phase epitaxy; Silicon; Layers; Ceramics; Silicon compounds; Recrystallization; Grain boundaries

Lange termijn energievisie op Parkstad, Amsterdam

Ligthart, F.A.T.M.; Verhoog, S.M.; Gilijamse, W.

ECN-C--00-091

Petten : ECN, September 2000. – 53 p.

Keywords: Duurzame energie in de stedenbouw; Energievisie tuinsteden; Parkstad; Amsterdam; Milieudienst

Life-cycle analysis and optimisation of solar home systems : interim report over 1999 of ENGINE project 74513

Dogger, J.D.; Nieuwenhout, F.D.J.; Vervaart, M.R.; Jansen, J.C.; Linden, N.H. van der; Lafleur, M.C.C.; Lasschuit, P.E.

ECN-C--00-047

Petten : ECN, June 2000. – 34 p.

Keywords: Life cycle; Service life; Optimization; Photovoltaic power supplies; Progress report; Systems analysis; Households; Monitoring; Socio-economic factors; Institutional factors; Data acquisition; Performance; Zimbabwe

Light trapping in alkaline texture etched crystalline silicon wafers

Hylton, J.D.; Burgers, A.R.; Sinke, W.C.

ECN-RX--00-017

Petten : ECN, May 2000. – 4 p.

Keywords: Trapping; Etching; Silicon; Texture; Spectral reflectance; Electric conductivity; Atomic force microscopy; Encapsulation

Long-term stability of dye sensitized solar cells for large area power applications (LOTS-DSC)

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

Kern, R.; Herber, J.; Schill, C.; Schubert, M. (FMF, Freiburg (Germany)); Meyer, A.; Meyer, T. (Solarix S.A. (Switzerland)); Uhlandorg, I.; Holzbock, J.; Niepmann, R. (INAP (Germany))

ECN-RX--00-015

Petten : ECN, May 2000. – 7 p.

Keywords: Stability; Dyes; Organic solar cells; Ultraviolet radiation; Illuminance; Aging; Magnesium iodides; Thermal stresses; Solvents; Chemical composition; Additives; Nitriles; Fill factors; Energy efficiency; Electric conductivity; Calcium iodides; Tbp

Mapping of contact resistance and locating shunts on solar cells using resistance analysis by mapping of potential (RAMP) techniques

Heide, A.S.H. van der; Schönecker, A.; Wyers, G.P.; Sinke, W.C.

ECN-RX--00-014

Petten : ECN, May 2000. – 4 p.

Keywords: Mapping; Electric conductivity; Silicon solar cells; Screen printing; Fill factors; Detection; Semiconductor resistors

Metallisation patterns for interconnection through holes

Burgers, A.R.; Bultman, J.H.; Tip, A.C.; Sinke, W.C.

ECN-RX--99-031

Petten : ECN, February 2000. – 6 p.

Keywords: Silicon solar cells; Silicon; Design; Energy efficiency; Electric conductivity; P-n junctions

Offshore wind turbine systems in Europe (Offshore Windkraftanlagen in Europa)

Beurskens, H.J.M.

ECN-RX--00-001

Petten : ECN, January 2000. – 13 p.

Keywords: Wind turbines; Offshore sites; North sea; Reviews; Wind turbine arrays; Research programs; Demonstration programs; Capacity

Ontwikkeling van hoogwaardige aansluitingen van glas, kozijn en omliggende constructie

Wijnands, L.A.

ECN-C--00-075

Petten : ECN, August 2000. – 162 p.

Keywords: Walls; Thermal insulation; Glazing materials; Windows; Construction; Performance testing; Computerized simulation; Design; Heat transfer; Thermal conduction; Heat losses; Vapor condensation; Computer calculations

Pin-up module: a design for higher efficiency, easy module manufacturing and attractive appearance

Bultman, J.H.; Weeber, A.W.; Brieko, M.W.; Hoornstra, J.; Burgers, A.R.; Dijkstra, J.A.; Tip, A.C.; Schuurmans, F.M.

ECN-RX--00-010

Petten : ECN, May 2000. – 4 p.

Keywords: Energy efficiency; Manufacturing; Design; Silicon solar cells; Fill factors; Energy losses; Spray coating

R&D of solar cells and modules

Hoornstra, J.; Bultman, J.H.

ECN-B--00-006

Petten : ECN, April 2000. – 2 p.

Keywords:

Reliability testing of grid connected PV inverters

Rooij, P.M.; Eikelboom, J.A.; Heskes, P.J.M.

ECN-RX--00-019

Petten : ECN, May 2000. – 4 p.

Keywords: Inverters; Interconnected power systems; Reliability; Photovoltaic power supplies; Service life; Field tests; Bench-scale experiments; Temperature distribution

Renovatieconcepten voor eengezins doorzonwoningen

Verkerk, L.P.; Kaan, H.F.

ECN-C--00-052

Petten : ECN, October 2000. – 64 p.

Keywords: Retrofitting; Houses; Energy conservation; Thermal comfort; Solar energy; Thermal insulation; Double glazing; Construction; Energy efficiency; Sun shades; Netherlands

Silicon solar cells textured by reactive ion etching with natural lithography

Burgers, A.R.; Bultman, J.H.; Beneking, C.; Nositschka, W.A.; Voigt, O.; Kurz, H.

ECN-RX--00-012

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon solar cells; Texture; Etching; Silicon; Polycrystals; Masking; Energy efficiency; Fill factors; Electric conductivity

Single step selective emitter using diffusion barriers

Bultman, J.H.; Kinderman, R.; Hoornstra, J.; Koppes, M.

ECN-RX--00-011

Petten : ECN, May 2000. – 3 p.

Keywords: Silicon solar cells; Diffusion barriers; Screen printing; Drying; Doped materials; Silicon oxides; Electric conductivity; Concentration ratio; Phosphorus; Diffusion; Spectrally selective surfaces

Solar home systems : manual for design and modification of solar home system components

Vervaart, M.R.; Nieuwenhout, F.D.J.

ECN-C--00-019

Petten : ECN, January 2000. – 148 p.

Keywords: Solar equipment; Houses; Design; Modifications; Manuals; Lighting systems; Ac systems; Dc systems; Inverters; Systems analysis; Electric batteries; Households; Developing countries; Solar battery chargers; Size; Technology assessment; Fluorescent lamps; Voltage regulators

Spectral response and IV-characterization of dye-sensitized nanocrystalline TiO₂ solar cells

Sommeling, P.M.; Rieffe, H.C.; Roosmalen, J.A.M. van; Schönecker, A.; Kroon, J.M.; Wienke, J.A.; Hinsch, A.

ECN-RX--00-029

Petten : ECN, September 2000. – 12 p.

Keywords:

Technische monitoring van PV-systemen te Apeldoorn : periode september 1997 - september 1999

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

ECN-C--00-005

Petten : ECN, January 2000. – 39 p.

Keywords: Photovoltaic power supplies; Solar cells; Monitoring; Performance; Inverters; Energy yield; Energy efficiency; Solar radiation

Thin-film solar cells: technology evaluation and perspectives

Bossert, R.H.; Vaan, M.J.M. de ; Tool, C.J.J.; Roosmalen, J.A.M. van; Wentink, C.H.M.

ECN-RX--00-005

Petten : ECN, May 2000. – 58 p.

Keywords: Silicon solar cells; Thin films; Technology assessment; Silicon; Crystal structure; Amorphous state; Netherlands; Evaluation; Payback period; Toxicity; Cost; Copper selenides; Indium selenides; Gallium selenides; Cadmium tellurides; Organic solar cells; Dyes; Copper compounds; Indium sulfides; Gallium sulfides; Copper sulfides; Risk assessment; Comparative evaluations; Photovoltaic power supplies; Deposition; Energy efficiency; Physical properties; Manufacturing

Vernieuwende concepten voor lokale duurzame energiesystemen : eindverslag

Woude, R.R. van der; Groot, A. de; Ruijg, G.J.; Noord, M. de; Lako, P.; Gilijamse, W.; Boer, B.J. de; Jong, M.J.M.

ECN-C--00-018

Petten : ECN, January 2000. – 94 p.

Keywords: Renewable energy sources; Energy supplies; Energy demand; Urban areas; Energy systems; Residential sector; Netherlands; Energy conservation; Households; Data compilation; Systems analysis; Energy consumption; Space heating; Houses; Energy conversion; Cost estimation

2.9 ECN Renewable Energy in the Built Environment

Annual report 1999

ECN Communicatie

ECN-P--00-005

Petten : ECN, June 2000. – 46 p.

Keywords: Annual report

De milieu-effecten van verlichtingssystemen in kantoren

Lafleur, M.C.C.; Wentink, C.H.M.

ECN-C--00-104

Petten : ECN, December 2000. – 54 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

Deliverable D7 : PLC service business model development and market survey instrument (final version, 29 december 2000). PALAS - Powerline as an Alternative Local Access IST-1999-11379

Kamphuis, I.G.; Warmer, C.J. (ECN, Petten (Netherlands));

Sweet, P. (EnerSearch AB, Malmö (Sweden)); Olsson, M. (EnerSearch/Sydskraft Broadband, Malmö (Sweden)); Akkermans, H. (AKMC, Amsterdam (Netherlands))

ECN-C--01-037

Petten : ECN, December 2000. – 46 p.

Keywords: Data transmission; Data transmission systems; Electric cables; Business; Market; Technology assessment; Competition; Internet; Public utilities; Service sector

ECN-Nieuwbouw op weg naar 0-energie

Ligthart, F.A.T.M.; Kaan, H.F.

ECN-C--00-030

Petten : ECN, February 2000. – 22 p.

Keywords: Office buildings; Energy efficiency; Daylighting; Ventilation; Ecn; Netherlands

Een milieubewuste keuze van verlichtingssystemen voor kantoren : een handreiking voor gebouwbeheerders

Lafleur, M.C.C.; Wentink, C.H.M.

ECN-C--00-102

Petten : ECN, December 2000. – 29 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

Energieprestatie van het kantoorgebouw van bouwbedrijf Noordersluis

Sijpheer, N.C.; Helden, W.G.J. van

ECN-C--00-096

Petten : ECN, November 2000. – 16 p.

Keywords: Office buildings; Energy conservation; Construction; Cost benefit analysis; Energy efficiency; Heat recovery; Cooling systems; Daylighting; Lighting systems; Energy consumption

Het functioneren van stralingsbranders in de Grote Sint Laurenskerk in Alkmaar

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

ECN-C--00-031

Petten : ECN, February 2000. – 29 p.

Keywords: Radiation heating; Radiant heaters; Energy efficiency; Public buildings; Space heaters; Performance; Infrared thermography; Temperature measurement; Humidity control; Thermal comfort; Netherlands; Air infiltration; Energy consumption

Installatieconcept voor villa's in het Burgemeester Kootpark te Uithoorn: duurzaam comfort

Ligthart, F.A.T.M.; Sijpheer, N.C.

ECN-C--00-072

Petten : ECN, October 2000. – 32 p.

Keywords: Houses; Netherlands; Ground source heat pumps; Seasonal thermal energy storage; Space heating; Installation; Systems analysis; Design; Energy conservation; Investment; Cost; Heat recovery; Water heating; Energy efficiency

Invloed van stedenbouwkundige thema's op de energievisie

Koopmans, B.T.

ECN-C--00-116

Petten : ECN, December 2000. – 112 p.

Keywords: Urban areas; Energy consumption; Energy policy; Local government; Netherlands; Environmental impacts; Energy conservation; Calculation methods; Energy efficiency standards; Comparative evaluations; Road transport; Buildings

Jaarverslag 1999

ECN Communicatie

ECN-P--00-004

Petten : ECN, May 2000. – 46 p.

Keywords: Annual report; Jaarverslag

Lange termijn energievisie op Parkstad, Amsterdam

Ligthart, F.A.T.M.; Verhoog, S.M.; Gilijamse, W.

ECN-C--00-091

Petten : ECN, September 2000. – 53 p.

Keywords: Duurzame energie in de stedenbouw; Energievisie tuinsteden; Parkstad; Amsterdam; Milieudienst

Ontwikkeling van hoogwaardige aansluitingen van glas, kozijn en omliggende constructie

Wijnands, L.A.

ECN-C--00-075

Petten : ECN, August 2000. – 162 p.

Keywords: Walls; Thermal insulation; Glazing materials; Windows; Construction; Performance testing; Computerized simulation; Design; Heat transfer; Thermal conduction; Heat losses; Vapor condensation; Computer calculations

Proefopstelling PV-geïntegreerde zonwering

Kaan, H.F. (ECN, Petten (Netherlands));

Pernot, C.E.E. (Centrum Bouwonderzoek TNO-TUE, Eindhoven)

ECN-C--00-016

Petten : ECN, January 2000. – 18 p.

Keywords: Daylighting; Photovoltaic power supplies; Netherlands; Ecn; Laboratory buildings; Design; Mockup; Performance testing; Sun shades; Computerized simulation

Renovatieconcepten voor eengezins doorzonwoningen

Verkerk, L.P.; Kaan, H.F.

ECN-C--00-052

Petten : ECN, October 2000. – 64 p.

Keywords: Retrofitting; Houses; Energy conservation; Thermal comfort; Solar energy; Thermal insulation; Double glazing; Construction; Energy efficiency; Sun shades; Netherlands

3. ECN PUBLICATIONS BY DOCUMENT TYPE

(sorted out by publication number)

3.1 C-Publications

ECN-C--00-001

Gielen, D.J.; Bos, A.J.M.; Feber, M.A.P.C. de; Gerlagh, T.

Biomass for greenhouse gas emission reduction task 8 : optimal emission reduction strategies for Western Europe

Petten : ECN, October 2000. – 161 p.

Keywords: Western europe; Biomass; Air pollution abatement; Greenhouse gases; Environmental policy; Energy policy; Mitigation; Automotive fuels; Forestry; Energy recovery; Wastes; Energy consumption; Materials; Food; Material substitution; Fuel substitution; M codes; Energy models; Data covariances; Supply and demand; Sensitivity analysis; Technology assessment; Recommendations

ECN-C--00-002

Brand, A.J.; Garrel, A. van; Snel, H. (ECN, Petten (Netherlands));

Rozendal, D.; Houwink, R. (NLR, Amsterdam (Netherlands)); Rooij, R.J.P.O.M. van; Timmer, W.A. (TUD, Delft (Netherlands))

Voorstudie radiale stroming in overtrek

Petten : ECN, December 2000. – 60 p.

Keywords: Radial flow; Wind turbines

ECN-C--00-003

Brink, R.W. van den; Verhaak, M.J.F.M. (ECN, Petten (Netherlands));

Lijssel, J.W.N. van; Gent, M.M.C. (Stork Engineering Consultancy)

Katalytische N2O-verwijdering in de saltpeterzuurindustrie : managment samenvatting = Catalytic destruction of N2O in the nitric acid industry: executive summary

Petten : ECN, January 2000. – 19 p.

Keywords: Nitrous oxide; Climatic change; Greenhouse gases; Catalysis; Feasibility studies; Netherlands; Selective catalytic reduction; Propane; Nitric acid; Catalysts; Carbon dioxide

ECN-C--00-004

Overbeek, J.P.

LCA spoiler voor transportvoertuigen : glas- of natuurvezelbasis?

Petten : ECN, February 2000. – 72 p.

Keywords: BIOLICHT; LCA; Transport

ECN-C--00-005

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

Technische monitoring van PV-systemen te Apeldoorn : periode september 1997 - september 1999

Petten : ECN, January 2000. – 39 p.

Keywords: Photovoltaic power supplies; Solar cells; Monitoring; Performance; Inverters; Energy yield; Energy efficiency; Solar radiation

ECN-C--00-006

Hensen, A.

Evaluatie van de methaanemissie van de deponie Braambergen

Petten : ECN, January 2000. – 33 p.

Keywords: Methane; Municipal wastes; Plumes; Netherlands; Emission; Waste disposal; Solid state lasers; Absorption; Nitrous oxide; Carbon dioxide; Cdte semiconductor detectors; Meteorology; Computer calculations; Experimental data

ECN-C--00-010

Ybema, J.R.; Jansen, J.C.; Ormel, F.

Project definition and introduction to some key concepts and issues : the joint CICERO-ECN project on sharing the burden of greenhouse gas reduction among countries [CICERO-WP-1999:12]

Petten : ECN, February 2000. – 16 p.

Keywords: Greenhouse gases; Emission; Mitigation; Air pollution abatement; Data analysis; Sectoral analysis; Cost estimation; Population density; Energy consumption; Regional analysis; Carbon dioxide; Methane; Nitrous oxide; Organic halogen compounds; Sulfur fluorides; Pollution sources; Negotiation

ECN-C--00-011

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

Burden differentiation: fairness principles and proposals : the joint CICERO-ECN project on sharing the burden of greenhouse gas reduction among countries (CICERO-WP 1999:13)

Petten : ECN, February 2000. – 32 p.

Keywords: Greenhouse gas; Global climate system

ECN-C--00-012

Ybema, J.R.; Battjes, J.J.; Jansen, J.C.; Ormel, F.

Burden differentiation: GHG emissions, undercurrents and mitigation costs : the joint CICERO-ECN project on sharing the burden of greenhouse gas reduction among countries [CICERO-WP-1999:14]

Petten : ECN, February 2000. – 36 p.

Keywords: Greenhouse gases; Emission; Environmental policy; Carbon dioxide; Methane; Nitrous oxide; Fluorinated alicyclic hydrocarbons; Sulfur fluorides; Cost; Data analysis; Data compilation; Sectoral analysis; Air pollution abatement; Mitigation

ECN-C--00-013

Torvanger, A.; Ringius, L. (CICERO (Oslo, Norway))

Burden differentiation: criteria for evaluation and development of burden sharing rules : CICERO working paper 2000:1

Petten : ECN, February 2000. – 9 p.

Keywords:

ECN-C--00-015

Linden, N.H. van der; Ybema, J.R.; Beeldman, M.; Rooijen, S.N.M. van

Potentiëlen en kosten van broeikasgasreductie in binnen- en buitenland : een samenvattende analyse

Petten : ECN, March 2000. – 23 p.

Keywords: Greenhouse gases; Air pollution abatement; Cost estimation; Netherlands; Environmental policy; Economics; Eastern europe; Developing countries; Carbon dioxide; Supply and demand; Implementation; Comparative evaluations; Data analysis; Emission; Mathematical models

ECN-C--00-016

Kaan, H.F. (ECN, Petten (Netherlands));

Pernot, C.E.E. (Centrum Bouwonderzoek TNO-TUE, Eindhoven)

Proefopstelling PV-geïntegreerde zonwering

Petten : ECN, January 2000. – 18 p.

Keywords: Daylighting; Photovoltaic power supplies; Netherlands; Ecn; Laboratory buildings; Design; Mockup; Performance testing; Sun shades; Computerized simulation

ECN-C--00-017

Arkel, W.G. van

De 'grijze' bijdragen aan StatLine : synthese van CBS-data en ECN-kennis met betrekking tot omzetting en verbruik van energie

Petten : ECN, July 2000. – 40 p.

Keywords: Statistical data; Netherlands; Energy consumption; Buildings; Ecn; Energy conversion; Sectoral analysis; Industry; Households; Transportation sector; Energy efficiency; Natural gas; Electricity; Monitoring

ECN-C--00-018

Woude, R.R. van der; Groot, A. de; Ruijg, G.J.; Noord, M. de; Lako, P.; Gilijamse, W.; Boer, B.J. de; Jong, M.J.M.

Vernieuwende concepten voor lokale duurzame energiesystemen : eindverslag

Petten : ECN, January 2000. – 94 p.

Keywords: Renewable energy sources; Energy supplies; Energy demand; Urban areas; Energy systems; Residential sector; Netherlands; Energy conservation; Households; Data compilation; Systems analysis; Energy consumption; Space heating; Houses; Energy conversion; Cost estimation

ECN-C--00-019

Vervaart, M.R.; Nieuwenhout, F.D.J.

Solar home systems : manual for design and modification of solar home system components

Petten : ECN, January 2000. – 148 p.

Keywords: Solar equipment; Houses; Design; Modifications; Manuals; Lighting systems; Ac systems; Dc systems; Inverters; Systems analysis; Electric batteries; Households; Developing countries; Solar battery chargers; Size; Technology assessment; Fluorescent lamps; Voltage regulators

ECN-C--00-020

Hiltten, O. van; Battjes, J.J.; Dijkstra, J.W.; Hemmes, K.; Kaal, M.B.T.; Lako, P.; Nahuis, R.; Raad, A. de

Energietechnologie in het spanningsveld tussen klimaatbeleid en liberalisering

Petten : ECN, May 2000. – 92 p.

Keywords: Energy conversion; Climatic change; Environmental policy; Competition; Market; Technology assessment; Energy policy; Deregulation; Energy efficiency; Forecasting; Economic impact; Socio-economic factors; Technology impacts; Social impact; Carbon dioxide; Emission; Renewable energy sources

ECN-C--00-021

Schuring, E.W.; Correia, L.A.

Koude plasmadepositie voor het aanbrengen van deklagen: een verkennende studie

Petten : ECN, February 2000. – 29 p.

Keywords: Cold plasma; Coatings; Destructive testing; Aluminium; Thickness; Corrosion; Anodization; Microstructure; Aluminium oxides; Substrates; Multi-element analysis

ECN-C--00-022

Dril, A.W.N. van; Rijkers, F.A.M.; Battjes, J.J.

Toekomst warmtekrachtkoppeling : actualisatie betreffende tarieven DTe en REB

Petten : ECN, February 2000. – 14 p.

Keywords: Cogeneration; Netherlands; Competition; Market; Tariffs; Energy policy; Prices; Taxes

ECN-C--00-023

Neeft, J.P.A.

Stookgasreiniging : een overzicht van kennis en faciliteiten bij ECN

Petten : ECN, March 2000. – 16 p.

Keywords: Fuel gas; Purification; Ecn; Cleaning; Gasification; Biomass; Coal gasification; Dehalogenation; Desulfurization; Removal; Dusts; Alkali metals; Tar; Ammonia; Hydrocyanic acid; Test facilities; Bench-scale experiments

ECN-C--00-024

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

Nath, C. (Germanischer Lloyd (Hamburg, DE)); Eriksson, C. (DET Norske Veritas (Hoevik, Norway)); Vionis, P. (Centre for Renewable Energy Sources [CRES], (Athens, Greece))

Experience of wind turbine manufacturers with wind turbine certification: report of subtask A1 of project EWTC

Petten : ECN, March 2000. – 21 p.

Keywords: Wind turbines; Certification; European union; Manufacturers; Wind power industry; Cost

ECN-C--00-025

Veltman, A.T. (ECN, Petten (Netherlands));

Fernhout, J.T. (Adviesbureau Fernhout voor Elektrotechniek en Energie FEE)

Energieverbruik in openbare verlichting en verkeersregelinstallaties : eindrapport verkeers-regelinstallaties

Petten : ECN, July 2000. – 31 p.

Keywords: Light bulbs; Control systems; Lighting systems; Energy consumption; Netherlands; Light emitting diodes; Service life; Energy efficiency; Maintenance; Energy conservation; Payback period; Switching circuits

ECN-C--00-026

Sijm, J.P.M.; Ormel, F.; Martens, J.W.; Rooijen, S.N.M. van; Voogt, M.H.; Wees, M.T. van; Zoeten-Dartenset, C. de

Kyoto mechanisms : the role of joint implementation, the clean development mechanism and emissions trading in reducing greenhouse gas emissions

Petten : ECN, March 2000. – 54 p.

Keywords: Greenhouse gases; Emission; Air pollution abatement; International agreements; Environmental policy; Trade; Cost; Bilateral agreements; International cooperation; Data analysis; Per capita values; Gross domestic product

ECN-C--00-028

Dinkelbach, L.

Thermochemical conversion of willow from short rotation forestry

Petten : ECN, February 2000. – 21 p.

Keywords: Thermochemical processes; Willows; Short rotation cultivation; Combustion; Gasification; Pyrolysis; Comparative evaluations

ECN-C--00-030

Ligthart, F.A.T.M.; Kaan, H.F.

ECN-Nieuwbouw op weg naar 0-energie

Petten : ECN, February 2000. – 22 p.

Keywords: Office buildings; Energy efficiency; Daylighting; Ventilation; Ecn; Netherlands

ECN-C--00-031

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

Het functioneren van stralingsbranders in de Grote Sint Laurenskerk in Alkmaar

Petten : ECN, February 2000. – 29 p.

Keywords: Radiation heating; Radiant heaters; Energy efficiency; Public buildings; Space heaters; Performance; Infrared thermography; Temperature measurement; Humidity control; Thermal comfort; Netherlands; Air infiltration; Energy consumption

ECN-C--00-032

Schaeffer, G.J.; Boots, M.G. (ECN, Petten (Netherlands));

Mitchell, C.; University of Sussex. Science and Technology Policy Research [SPRU], Brighton (UK); Timpe, C.; Cames, M. (Oeko-Institut); Anderson, T.

Options for design of tradable green certificate systems

Petten : ECN, March 2000. – 88 p.

Keywords: Greenhouse gases; Air pollution abatement; Renewable energy sources; Market; Trade; Certification; European union; Implementation; Emission; Financial incentives; Bilateral agreements; Compliance; Cost; Administrative procedures; Environmental policy; Climatic change; Recommendations

ECN-C--00-033

Bos, A.J.M.; Bosch, A. van den; Mallant, R.K.A.M.

Marktkansen voor brandstofcellen in bedrijfsvoertuigen, deel 1 : beleid

Petten : ECN, February 2000. – 64 p.

Keywords: Buses; Market; Netherlands; Feasibility studies; Solid electrolyte fuel cells; Performance; Cost; Hydrogen fuels; Nickel-cadmium batteries; Trucks; Vans; Hybrid electric-powered vehicles; Diesel engines; Natural gas; Liquefied petroleum gases; Nitrogen oxides; Emission; Comparative evaluations; Government policies; Carbon dioxide; Particulates; Volatile matter; Carbon monoxide; Sulfur dioxide

ECN-C--00-034

Snijders, W.; Mallant, R.K.A.M. (ECN, Petten (Netherlands));

Berkhout, P.D. (Den Oudsten Bussen, Woerden (Netherlands)); Sloetjes, E.W. (STORK Product Engineering, Amsterdam (Netherlands))

Marktkansen voor brandstofcellen in bedrijfsvoertuigen: deel 2: techniek

Petten : ECN, February 2000. – 83 p.

Keywords: Buses; Market; Netherlands; Feasibility studies; Hybrid systems; Solid electrolyte fuel cells; Power density; Performance; Cost; Alkaline electrolyte fuel cells; Hydrogen fuels; Nickel-cadmium batteries; Fuel cells; Reformer processes; Reviews

ECN-C--00-035

Lugten, P.E.; Jansen, D.; Burgt, M.J. van der; Carp, A.

Assessment of carbon-rejection processes as a method of CO₂ abatement: IEA Greenhouse Gas R&D Programme United Kingdom

Petten : ECN, June 2000. – 47 p.

Keywords: Air pollution abatement; Carbon dioxide; Emission; Carbon black; Coke; Methanol; Methane; Pyrolysis; Hydrogen production; Power generation; Fossil fuels; Metallurgy; Market; Economics; Economic analysis; Sensitivity analysis

ECN-C--00-037

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

Keuken, M.P.; TNO. Milieu, Energie en Procesinnovatie [TNO-MEP]

Ultrafine particles and carbon from road traffic emissions : a literature study [TNO-MA-161]

Petten : ECN, March 2000. – 38 p.

Keywords: Road transport; Emission; Particulates; Public health; Respiratory system diseases; Urban areas; Carbon; Smokes; Particle size; Concentration ratio; Netherlands

ECN-C--00-038

Even, A.; Brink, H.M. ten

Schatting van de bijdrage van secundair organisch materiaal aan PM₁₀

Petten : ECN, March 2000. – 25 p.

Keywords: Netherlands; Air pollution; Aerosols; Organic matter; Particulates; Data analysis; Carbon; Urban areas; Rural areas; Seasonal variations; Data covariances; Pollution sources

ECN-C--00-039

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

Schaap, M. (IMAU (Utrecht, The Netherlands))

Estimations of the background concentrations of PM₁₀ and sulphate on the Northern Hemisphere

Petten : ECN, March 2000. – 29 p.

Keywords: PM₁₀; Sulphur; Sulphate; PM_{2.5}; Background concentrations; Aerosol; Northern Hemisphere

ECN-C--00-040

Erismann, J.W.; Vries, W. de; Kros, J. (ECN, Petten (Netherlands));
Oenema, O. (Alterra, Research Instituut voor de groene ruimte (Wageningen)); Eerden, L.J. van
der (Plant Research International (Wageningen)); Zeijts, H. van (Centrum voor Landbouw en
Milieu [CLM])

Analyse van de stikstofproblematiek in Nederland : een eerste verkenning

Petten : ECN, March 2000. – 69 p.

Keywords: Netherlands; Nitrogen; Data analysis; Environmental effects; Environmental policy;
Emission; Agriculture; Industry; Vehicles; Land pollution abatement; Evaluation; Nitrogen cycle

ECN-C--00-042

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));
Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D.
(Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.);
Mikula, L.; Herich, S.; Bella, M. (Slovak Energy Agency SEA)

Barriers to combined heat and power production in the Czech and Slovak Republics

Petten : ECN, November 2000. – 133 p.

Keywords:

ECN-C--00-043

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));
Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D.
(Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.)

*Combined heat and power action plan : policy action plan for promotion of combined heat and
power production in the Czech Republic to 2010*

Petten : ECN, November 2000. – 40 p.

Keywords: Czech republic; Cogeneration; Dual-purpose power plants; Energy policy; Fore-
casting; District heating; Energy efficiency; Mitigation; Air pollution abatement; Carbon dioxide;
Emission; Recommendations; Institutional factors; Pricing regulations; Tariffs; Taxes; Financing;
Program management; Economic impact; Social impact; Environmental impacts

ECN-C--00-044

Wees, M.T. van; Raad, A. de; Dougle, P.G.; Battjes, J.J. (ECN, Petten (Netherlands));
Maly, M.; Kodytek, Z.; Cizek (SRC International CS s.r.o.); Cohen, P.; Mercer, D.; Yellen, D.
(Enviros March); Vazac, V.; Synek, P.; Henelova, V.; Vich, J.; Sitny, P. (March Consulting s.r.o.);
Mikula, L.; Herich, S.; Bella, M. (Slovak Energy Agency SEA)

*Combined heat and power action plan : policy action plan for promotion of combined heat and
power production in the Slovak Republic to 2010*

Petten : ECN, November 2000. – 30 p.

Keywords: Cogeneration; Dual-purpose power plants; Energy policy; Forecasting; District he-
ating; Energy efficiency; Mitigation; Air pollution abatement; Carbon dioxide; Emission; Re-
commendations; Institutional factors; Pricing regulations; Tariffs; Taxes; Financing; Program
management; Economic impact; Social impact; Environmental impacts; Slovakia

ECN-C--00-045

Boonekamp, P.G.M.; Dril, A.W.N. van; Jeeninga, H.; Menkveld, M.; Arkel, W.G. van

Milieukosten van genomen besparingsmaatregelen

Petten : ECN, March 2000. – 95 p.

Keywords: Environmental policy; Energy policy; Cost benefit analysis; Netherlands; Energy conservation; Households; Service sector; Calculation methods; Industry; Sectoral analysis; Agriculture; Data analysis; Renewable energy sources; Appliances; Cogeneration; Financial incentives; Buildings; Payback period

ECN-C--00-047

Dogger, J.D.; Nieuwenhout, F.D.J.; Vervaart, M.R.; Jansen, J.C.; Linden, N.H. van der; Lafleur, M.C.C.; Lasschuit, P.E.

Life-cycle analysis and optimisation of solar home systems : interim report over 1999 of ENGINE project 74513

Petten : ECN, June 2000. – 34 p.

Keywords: Life cycle; Service life; Optimization; Photovoltaic power supplies; Progress report; Systems analysis; Households; Monitoring; Socio-economic factors; Institutional factors; Data acquisition; Performance; Zimbabwe

ECN-C--00-048

Battjes, J.J.; Beeldman, M.; Jansen, J.C.; Kroon, P.; Ormel, F.; Schaeffer, G.J.; Sijm, J.P.M.

Beleidsopties voor CO-2-emissiereductie en de inzet van hernieuwbare energie in een geliberaliseerde energiemarkt

Petten : ECN, March 2000. – 60 p.

Keywords: Energy policy; Environmental policy; Renewable energy sources; Emission; Market; Greenhouse gases; Air pollution abatement; Netherlands; Financial incentives; Legislation; Trade; Households; Industry; Business

ECN-C--00-049

Hendriks, H.B.; Dam, J.J.D. van

Normontwikkeling windenergie : een verslag van de werkzaamheden in 1999

Petten : ECN, August 2000. – 222 p.

Keywords: Wind turbines; Standardization; Standards; Safety; Noise pollution control; Performance; Mechanical tests; Static loads; Rotors; Performance testing; Certification; Lightning arresters; Reviews; Regulations; Acoustic monitoring

ECN-C--00-050

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

Evaluation of leaching behaviour of selected wastes designated as hazardous by means of basic characterisation tests

Petten : ECN, August 2000. – 155 p.

Keywords: Evaluation; Leaching; Wastes; Characterization

ECN-C--00-052

Verkerk, L.P.; Kaan, H.F.

Renovatieconcepten voor eengezins doorzonwoningen

Petten : ECN, October 2000. – 64 p.

Keywords: Retrofitting; Houses; Energy conservation; Thermal comfort; Solar energy; Thermal insulation; Double glazing; Construction; Energy efficiency; Sun shades; Netherlands

ECN-C--00-053

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 1999 : Dutch contribution to the project 'Cross country comparison on energy efficiency - Phase 5'
Petten : ECN, May 2000. – 74 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--00-055

Bulder, B.H. ; Dam, J.J.D. van
European windturbine testing procedure developments SMT 4-CT96-2116 : blade testing methods subtask 2
Petten : ECN, April 2000. – 79 p.

Keywords: Wind energy; Test results

ECN-C--00-056

Hensen, A.
Methaanemissie van de deponie Nauerna : november 1999
Petten : ECN, April 2000. – 29 p.

Keywords: Sanitary landfills; Methane; Emission; Netherlands; Plumes; Sampling; Air samplers; Diode-pumped solid state lasers; Meteorology; Calibration; Nitrous oxide

ECN-C--00-057

Dam, J.J.D. van
Full scale testing of a Nedwind NW25 rotor blade
Petten : ECN, April 2000. – 53 p.

Keywords: Performance testing; Rotors; Fatigue; Strain gages; Amplitudes; Damping; Eigenfrequency; Horizontal axis turbines; Mechanical vibrations

ECN-C--00-058

Sloot, H.A. van der; Cnubben, P.A.J.P.
Verkennde evaluatie kwaliteitsbeïnvloeding poederkoolvliegias : bijstoken van biomassa in een poederkoolcentrale of bijmenging van biomassa-assen met poederkoolvliegias
Petten : ECN, August 2000. – 88 p.

Keywords: Fly ash; Ashes; Pulverized fuels; Coal; Evaluation; Quality control; Biomass; Combustion; Fossil-fuel power plants; Mixing; Coal gasification; Combustion; Pyrolysis; Agglomeration; Particle size; Building materials; Cements; Leaching; Anions; Flue gas; Metals

ECN-C--00-060

Comans, R.N.J.; Zomeren, A. van; Sloot, H.A. van der (ECN, Petten (Netherlands)); Filius, J. (Landbouwwuniversiteit Wageningen)
Karakterisering organische stof: haalbaarheidsstudie naar genormaliseerde methoden voor de bepaling van de beschikbaarheid en rol van organische stof in grond, afval- en bouwstoffen m.b.t. verhoging van de uitloging van slecht water-oplosbare verontreinigingen
Petten : ECN, April 2000. – 82 p.

Keywords: Organic matter; Soils; Wastes; Leaching; Polycyclic aromatic hydrocarbons; Polychlorinated biphenyls; Metals; Pollutants; Aqueous solutions; Standardization; Extraction; Fractionation; Decomposition; Chemical composition; Quantitative chemical analysis

ECN-C--00-061

Brink, H.M. ten

Sampling of PM10 at high relative humidity

Petten : ECN, April 2000. – 17 p.

Keywords: Particulates; Sampling; Air samplers; Aerosols; Water; Netherlands; Ammonium sulfates; Ammonium nitrates; Fog; Humidity; Hygroscopicity; Salts; Droplets**ECN-C--00-062**

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

Effectiviteit energiepremies : analyse voor het huishoudelijk verbruik tot 2010

Petten : ECN, May 2000. – 54 p.

Keywords: Energy conservation; Netherlands; Households; Financial incentives; Appliances; Comparative evaluations; Product labeling; Energy efficiency**ECN-C--00-064**

Menkveld, M.; Ruijg, G.J.

Optimale energie-infrastructuur voor de nieuwbouwlocatie Bongerd/Zijkanaal I in Amsterdam-Noord

Petten : ECN, May 2000. – 23 p.

Keywords: Energy conservation; Houses; Netherlands; Urban areas; Heat distribution systems; Cost estimation; Cogeneration; Heat pumps; Energy efficiency standards; Energy efficiency; Natural gas distribution systems; Water heaters; Investment; Energy consumption; Environmental impacts**ECN-C--00-066**

Dekker, J.W.M. (ECN, Petten (Netherlands));

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

Evaluation of the 9th international course on implementation of wind energy, ECN, April 3-15, 2000

Petten : ECN, July 2000. – 41 p.

Keywords: Education; Educational facilities; Educational tools; Wind power; Implementation; Developing countries; Evaluation; Technology transfer; Scientific personnel**ECN-C--00-067**

Eikelboom, J.A.; Jansen, M.J.

Characterisation of PV modules of new generations : results of tests and simulations

Petten : ECN, July 2000. – 20 p.

Keywords: Photovoltaic power supplies; Performance testing; Electronic equipment; Thermodynamic properties; Simulation; Energy yield; Electric conductivity**ECN-C--00-068**

Selow, E.R. van; Luijten, G.B.

Off-gas treatment system : feasibility study for Nitta Corporation of Holland B.V.

Petten : ECN, June 2000. – 32 p.

Keywords: Volatile matter; Off-gas systems; Air pollution abatement; Surface coating; Belt conveyors; Cost estimation; Radiant heaters; Infrared radiation; Ceramics; Incinerators; Comparative evaluations

ECN-C--00-069

Overbeek, J.P.

Verwerkingstechnieken voor spoilers van glas- en natuurvezel versterkte kunststoffen

Petten : ECN, June 2000. – 28 p.

Keywords: Vehicles; Fiberglass; Service life; Fibers; Environmental impacts; Fuel consumption; Comparative evaluations; Resins; Materials handling; Processing; Pyrolysis; Gasification; Waste processing; Cement industry

ECN-C--00-070

Scheepers, M.J.J.; Raad, A. de

Warmtepompen en zonneboilers in de stad van de zon: financiering en rendabiliteit

Petten : ECN, July 2000. – 33 p.

Keywords: Financing; Houses; Heat pumps; Solar water heaters; Cost; Investment; Energy demand; Water heating; Space heating; Comparative evaluations; Financial incentives; Cost benefit analysis

ECN-C--00-071

Erisman, J.W.

Review of the pan-European monitoring programme on forest ecosystems

Petten : ECN, July 2000. – 43 p.

Keywords: Forests; Monitoring; Europe; Terrestrial ecosystems; Reviews; Air pollution monitoring; International cooperation; Evaluation; Environmental policy; European union; Legislation; Pollution regulations; Recommendations

ECN-C--00-072

Ligthart, F.A.T.M.; Sijpheer, N.C.

Installatieconcept voor villa's in het Burgemeester Kootpark te Uithoorn: duurzaam comfort

Petten : ECN, October 2000. – 32 p.

Keywords: Houses; Netherlands; Ground source heat pumps; Seasonal thermal energy storage; Space heating; Installation; Systems analysis; Design; Energy conservation; Investment; Cost; Heat recovery; Water heating; Energy efficiency

ECN-C--00-073

Bosch, A. van den; Arkel, W.G. van; Scheepers, M.J.J.; Volkers, C.H.; Hendriksen, P.; Elst, D.A.M.M.; TNO. Wegtransportmiddelen [TNO-WT]

Het Audi duo concept in de praktijk : milieuprestaties en de kansen en belemmeringen voor marktintroductie, bepaald in het Demonstratieproject Audi duo

Petten : ECN, September 2000. – 149 p.

Keywords: Hybrid electric-powered vehicles; Performance testing; Environmental effects; Market; Demonstration programs; Public opinion; Fuel consumption; Emission; Data acquisition; Attitudes

ECN-C--00-074

Beeldman, M. (ECN, Petten (Netherlands));

Wijngaart, R. van den (Rijksinstituut voor Volksgezondheid en Milieu [RIVM])

Synergie in de aanpak van klimaatverandering en verzuring : oplossingsrichtingen voor energie en mobiliteit in 2030. Achtergrondrapport bij de vijfde Nationale Milieuverkenning ter voorbereiding op het vierde Nationaal Milieubeleidsplan

Petten : ECN, July 2000. – 39 p.

Keywords: Netherlands; Climatic change; Acidification; Environmental policy; Energy conservation; Transport; Carbon dioxide; Energy consumption; Renewable energy sources; Nuclear energy; Nitrogen oxides; Volatile matter; Sulfur dioxide; Particulates; Economic impact; Attitudes; Energy efficiency; Cost estimation

ECN-C--00-075

Wijnands, L.A.

Ontwikkeling van hoogwaardige aansluitingen van glas, kozijn en omliggende constructie

Petten : ECN, August 2000. – 162 p.

Keywords: Walls; Thermal insulation; Glazing materials; Windows; Construction; Performance testing; Computerized simulation; Design; Heat transfer; Thermal conduction; Heat losses; Vapor condensation; Computer calculations

ECN-C--00-076

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

Groeman, J.F. (KEMA (Arnhem))

De werking van Nederlandse PV-inverters in gebieden met lage netspanning : een voorstudie

Petten : ECN, August 2000. – 23 p.

Keywords: Inverters; Photovoltaic power supplies; Netherlands; Market; Power distribution systems; Performance; Electric potential; Overvoltage; Electrical transients; Harmonics; Direct current

ECN-C--00-079

Mosquera, J.; Hensen, A.; Bulk, W.C.M. van den; Vermeulen, A.T.; Erisman, J.W.; Möls, J.J.

NH₃ flux measurements at Schagerbrug and Oostvaardersplassen, the Dutch contribution to the GRAMINAE experiment

Petten : ECN, July 2000. – 53 p.

Keywords: Netherlands; Ammonia; Daily variations; Seasonal variations; Deposition; Gramineae; Rangelands; Air-biosphere interactions; Emission; Land use; Concentration ratio; Wetlands

ECN-C--00-080

Drift, A. van der (ECN, Petten (Netherlands));

Kant, H.F. de (HoSt [Holec Projects/Stork Ketels] (Hengelo)); Rajani, J.B. (Shell Renewables)

Commercialisation BIVKIN-based gasification technology: non-confidential version

Petten : ECN, August 2000. – 56 p.

Keywords: Biomass; Gasification; Commercialization; Systems analysis; Cost; Technology assessment; Packed beds; Fluidized beds; Market; Energy efficiency; Investment; Cogeneration; Tar; Comparative evaluations

ECN-C--00-081

Sloot, H.A. van der; Rietra, R.P.J.J. (ECN, Petten (Netherlands));
Mulder, E. (TNO. Milieu, Energie en Procesinnovatie [TNO-MEP])
Evaluatie van de gevolgen van aanpassing van de pH van de uitloogvloeistof in de uitloognormen NEN 7343, 7345 en 7349

Petten : ECN, August 2000. – 27 p.

Keywords: Leachates; Leaching; Standardization; Ph value; Building materials; Wastes; Slags; Ashes; Chemical analysis; Comparative evaluations; Standards

ECN-C--00-082

Beeldman, M.; Wijngaart, R. van den (ECN, Petten (Netherlands));
Wijngaart, R. van den (Rijksinstituut voor Volksgezondheid en Milieu [RIVM])
Definitiestudie kennisinstrumentarium voor energie en emissies : verkenning naar de opbouw van een gezamenlijke kennisstructuur voor RIVM en ECN

Petten : ECN, September 2000. – 43 p.

Keywords: Knowledge management; Energy models; Calculation methods

ECN-C--00-083

Uyterlinde, M.A.; Jeeninga, H.
Leefstijl en huishoudelijk energieverbruik: een kwalitatief onderzoek naar de relatie tussen leefstijl en energieverbruik bij bewoners van energiezuinige woningen

Petten : ECN, August 2000. – 38 p.

Keywords: Leisure time activities; Socio-economic factors; Energy consumption; Households; Netherlands; Energy conservation; Ventilation; Space heating; Energy efficiency; Appliances; Houses; Public opinion; Attitudes; Public information

ECN-C--00-084

Dinkelbach, L.; Meijden, C.M. van der (ECN, Petten (Netherlands));
Brenneisen, L.M.; Strating, S.D. (HoSt [Holec Projects/Stork Ketels] (Hengelo)); Geleijn, M.; Wubbe, R. (ABB (Aalsmeer))
GASREIP: GASREIniging en Prime mover design: fase A: realisatie en beproeving van een basisconfiguratie ten behoeve van biomassa warmte-kracht koppeling

Petten : ECN, August 2000. – 32 p.

Keywords: Biomass; Purification; Waste water; Gasification; Producer gas; Bench-scale experiments; Performance testing; Cleaning; Tar; Dusts; Ammonia; Fluidized beds; Systems analysis; Cogeneration

ECN-C--00-085

Boots, M.G.; Schaeffer, G.J.; Zoeten, C. de (ECN, Petten (Netherlands));
Mitchell, C.; Anderson, T. (CMUR); Morthorst, P.E.; Nielsen, L. (RISO); Gual, M.; Del Rio, P.; Cadenas, A.; Hernandez, F. (UAM); Kühn, I.; Bräuer; Stronzik, M. (ZEW)
INTRACERT : inception report: the role of an integrated tradable green certificate system in a liberalising market

Petten : ECN, December 2000. – 167 p.

Keywords: Western europe; Austria; Belgium; Denmark; Finland; France; Federal republic of germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden; United kingdom; Energy policy; Trade; Market; Competition; Renewable energy sources; Greenhouse gases; Certification; Licenses; European union; Electricity; Heat; Natural gas

ECN-C--00-086

Groenendaal, B.J.; De Lange, T.J.; Lako, P. ; Roosmalen, J.A.M. van; Tool, C.J.J.; Wild-Scholten, M.J. de

Critical success factors for the large-scale introduction of grid-connected photovoltaic systems : a survey focusing on the non-technical aspects

Petten : ECN, November 2000. – 76 p.

Keywords:

ECN-C--00-087

Brink, R.W. van den; Verhaak, M.J.F.M. (ECN, Petten (Netherlands));

Gent, M.M.C.; Smit, A.W. (Jacobs Comprimio Nederland)

Direct catalytic decomposition and hydrocarbon-assisted catalytic reduction of N₂O in the nitric acid industry

Petten : ECN, November 2000. – 31 p.

Keywords: Nitrous oxide; Climatic change; Greenhouse gases; Catalysis; Feasibility studies; Netherlands; Selective catalytic reduction; Propane; Nitric acid; Catalysts; Carbon dioxide

ECN-C--00-091

Ligthart, F.A.T.M.; Verhoog, S.M.; Gilijamse, W.

Lange termijn energievisie op Parkstad, Amsterdam

Petten : ECN, September 2000. – 53 p.

Keywords: Duurzame energie in de stedenbouw; Energievisie tuinsteden; Parkstad; Amsterdam; Milieudienst

ECN-C--00-092

Kamphuis, I.G.; Warmer, C.J. (ECN, Petten (Netherlands));

Ottoson, H.; Lindell, G.; Sweet, P. (EnerSearch); Akkermans, H. (AKMC, Amsterdam (Netherlands)); Dickinson, J.; Hines, D.; Nicholson, P. (Electricom)

Deliverable D5 : state of the art and initial analysis of PLC services

Petten : ECN, June 2000. – 59 p.

Keywords: Communications; Public utilities; Data transmission systems; Technology assessment; Operating cost; Electronic equipment; Energy management systems; Computer networks; Office buildings; Residential buildings; Internet; Remote control; Reviews; Market; Telemetry

ECN-C--00-093

Menkveld, M.; Heinink, H.

Energiebesparing in het MKB : de rol van branche organisaties

Petten : ECN, October 2000. – 83 p.

Keywords: Energiebesparing; MKB

ECN-C--00-094

Comans, R.N.J.

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

Petten : ECN, December 2000. – 80 p.

Keywords:

ECN-C--00-095

Bremmers, P.; Veltman, A.T. (ECN, Petten (Netherlands));

Fernhout, J.T. (Adviesbureau Fernhout voor Elektrotechniek en Energie FEE)

Energieverbruik in openbare verlichting en verkeersregelininstallaties : eindrapportage openbare verlichting

Petten : ECN, October 2000. – 24 p.

Keywords: Light bulbs; Control systems; Lighting systems; Energy consumption; Netherlands; Light emitting diodes; Service life; Energy efficiency; Maintenance; Energy conservation; Payback period; Switching circuits

ECN-C--00-096

Sijpheer, N.C.; Helden, W.G.J. van

Energieprestatie van het kantoorgebouw van bouwbedrijf Noordersluis

Petten : ECN, November 2000. – 16 p.

Keywords: Office buildings; Energy conservation; Construction; Cost benefit analysis; Energy efficiency; Heat recovery; Cooling systems; Daylighting; Lighting systems; Energy consumption

ECN-C--00-100

Hiltten, O. van; Gerlagh, T.

Bedrijfseconomische en beleidsmatige evaluatie van elektriciteits- en warmteopwekking uit afval en biomassa : deelrapport taak 3 van het Marsroute-project

Petten : ECN, November 2000. – 107 p.

Keywords:

ECN-C--00-101

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

Faber, A.J.; Koch, H.J. (TNO-TPD, Delft (Netherlands)); Langreck, J. (Colibri, Vaals (Netherlands)); Marel, H.J. van der; Zuijlen, A.J.H.G. van (JCN, Leiden (Netherlands)) ; Rohn, N. (ABB, Baden (Switzerland))

Visibility study herak : heat recovery

Petten : ECN, November 2000. – 56 p.

Keywords: Gas turbines; Waste heat; Feasibility study

ECN-C--00-102

Lafleur, M.C.C.; Wentink, C.H.M.

Een milieubewuste keuze van verlichtingssystemen voor kantoren : een handreiking voor gebouw-beheerders

Petten : ECN, December 2000. – 29 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

ECN-C--00-103

Ree, R. van; Korbee, R.; Eenkhoorn, S.; Lange, T.J. de; Groenendaal, B.J.

Mee-/bijstookpotentieel biomassa in kolencentrales en aardgas-gestookte installaties: bepaling van de milieutechnische- en financieel-economische haalbaarheid

Petten : ECN, November 2000. – 176 p.

Keywords: Netherlands; Fossil-fuel power plants; Biomass; Cocombustion; Availability; Carbon dioxide; Emission; Feasibility studies; Systems analysis; Gasification; Pyrolysis; Environmental impacts; Cost benefit analysis; Wastes; Classification

ECN-C--00-104

Lafleur, M.C.C.; Wentink, C.H.M.

De milieu-effecten van verlichtingssystemen in kantoren

Petten : ECN, December 2000. – 54 p.

Keywords: Office buildings; Lighting systems; Decision making; Maintenance facilities; Environmental effects; Energy efficiency; Light bulbs; Comparative evaluations; Daylighting; Service life; Energy consumption; Maintenance

ECN-C--00-106

Beeldman, M.

Synergy in the approach to climate change and acidification : perspectives for energy and mobility in the Netherlands in 2030. Background report to the fifth National Environmental Outlook and the Netherlands fourth National Environmental Policy Plan

Petten : ECN, November 2000. – 38 p.

Keywords: Climate change; Mobility; Energy Policy

ECN-C--00-107

Dril, A.W.N. van; Burger, H.

CO2-score bedrijven en gemeenten : ontwikkeling methodiek voor het United Air Fund

Petten : ECN, November 2000. – 30 p.

Keywords: Business; Local government; Carbon dioxide; Emission; Environmental policy; Energy consumption; Air pollution abatement; Road transport; Households; Waste processing plants

ECN-C--00-108

Schuring, E.W.; Hofmans, H.E.

Metallographic characterisation of EUROFER97 plate and bar materials

Petten : ECN, October 2000. – 22 p.

Keywords: Metallography; Plates; Microstructure; Hardness; Chromium steels; Scanning electron microscopy; Martensitic steels; Grain size; Austenitic steels; Segregation; Tantalum; Titanium; Carbides; Sampling; Inclusions; Impurities; Chemical composition; Heat treatments; Certification

ECN-C--00-109

Ybema, J.R.; Cloin, J.; Nieuwenhout, F.D.J. (ECN, Petten (Netherlands));

Hunt, A.C. (IT Power); Kaufman, S.L. (Sunrise Technologies consulting)

Towards a streamlined CDM process for solar home systems : emission reductions from implemented systems and development of standardised baselines

Petten : ECN, November 2000. – 32 p.

Keywords: Emission; Carbon dioxide; Comparative evaluations; Calculation methods; Houses; Solar equipment; Air pollution abatement; Standardization; Developing countries; Performance testing

ECN-C--00-110

Ybema, J.R.

Towards a streamlined CDM process for solar home systems : case studies in selected countries

Petten : ECN, November 2000. – 73 p.

Keywords: Solar; Argentina; Honduras; India; Indonesia; Nepal; Republic of south africa

ECN-C--00-111

Kroon, P.; Rijkers, F.A.M.; Beeldman, M.

Mogelijke effecten van NOx-beleid op het warmtekrachtpotentieel : een analyse van de invloed van bestrijdingskosten op de rentabiliteit van warmtekracht

Petten : ECN, December 2000. – 50 p.

Keywords: Cogeneration; Nitrogen oxides; Environmental policy; Netherlands; Cost; Capacity; Economic impact; Internal combustion engines; Emission; Data analysis; Sensitivity analysis; Flue gas; Purification; Forecasting; Selective catalytic reduction; Investment

ECN-C--00-112

Hensen, A.

Op zoek naar onbekende bronnen van broeikasgassen

Petten : ECN, November 2000. – 49 p.

Keywords: Greenhouse gases; Pollution sources; Carbon dioxide; Methane; Nitrous oxide; Chlorofluorocarbons; Sulfur fluorides; Fluorinated aliphatic hydrocarbons; Air pollution monitoring; Air pollution monitors; Air samplers; Data analysis; Netherlands

ECN-C--00-113

Strijk, G.G.J.; Schuring, E.W.

Materiaalselectie onderzoek voor ECO-II van de Gemeentelijke Afvalverwerking Amsterdam (GDA)

Petten : ECN, November 2000. – 59 p.

Keywords: Teflon; Waste processing plants; Heat exchangers; Iron base alloys; Nickel base alloys; Silicon carbides; Aluminium oxides; Graphite; Molybdenum alloys; Stainless steel-316L; Enamels; Corrosion; Materials testing; Pitting corrosion; Crevice corrosion

ECN-C--00-114

Boerrigter, H.

Implementation of thermal processes for feedstock recycling of bromine and antimony, with energy recovery, from plastics Waste of Electrical and Electronic Equipment (WEEE): Phase 1: literature survey/status update, evaluation, and ranking of combustion, gasification, and pyrolysis based technologies

Petten : ECN, November 2000. – 68 p.

Keywords: Bromine; Electronic equipment; Electrical equipment; Recycling; Solid wastes; Plastics; Combustion; Gasification; Pyrolysis; Comparative evaluations; Energy recovery; Antimony; Energy efficiency; Materials recovery; Emission; Cost benefit analysis

ECN-C--00-115

Ligthart, F.A.T.M.; Kaan, H.F.

Energievisie Schalkwijk 2000+

Petten : ECN, February 2000. – 53 p.

Keywords: Netherlands; Urban areas; Energy efficiency; Energy policy; Local government; Retrofitting; Houses; Residential buildings; Energy consumption; Office buildings; Shopping centers; Energy conservation

ECN-C--00-116

Koopmans, B.T.

Invloed van stedenbouwkundige thema's op de energievisie

Petten : ECN, December 2000. – 112 p.

Keywords: Urban areas; Energy consumption; Energy policy; Local government; Netherlands; Environmental impacts; Energy conservation; Calculation methods; Energy efficiency standards; Comparative evaluations; Road transport; Buildings

ECN-C--00-118

Weijers, E.P.; Hensen, A.; Erisman, J.W.; Wilde, H.P.J. de; Cnubben., P.C.

Het energieke wegdek : inventarisatie van duurzame mogelijkheden van energieopwekking langs de snelweg

Petten : ECN, December 2000. – 56 p.

Keywords: Energieopwekking; Snelweg; Wegdek; Duurzame energie; Foto-voltaïsche systemen; PV-systemen; Geluidsschermen; Warmtewisselaars; Biomassa; Windenergie; Piëzo-elektriciteit; Peltier; Pavements; Roads; Photovoltaic power supplies; Heat exchangers; Biomass; Wind turbines; Piezoelectricity; Dielectric materials; Biomass conversion plants

ECN-C--00-120

Nauta, J.P.

Monitoring protocol 'aluminium lekverliezen'

Petten : ECN, December 2000. – 39 p.

Keywords: Aluminium; Leaks; Netherlands; Monitoring; Pollution sources; Industrial wastes; Scrap metals; Solid wastes; Data acquisition; Quality control; Waste disposal; Data compilation

ECN-C--00-121

Nauta, J.P.

Monitoring aluminium lekverliezen 1998

Petten : ECN, December 2000. – 29 p.

Keywords: Aluminium; Leaks; Netherlands; Monitoring; Pollution sources; Industrial wastes; Scrap metals; Solid wastes

ECN-C--00-122

Korobitsyn, M.A.; Berkel, F.P.F. van; Christie, G.M.

Final report: Novem contract no. 219.401-0012 : SOFC as a gas separator

Petten : ECN, December 2000. – 63 p.

Keywords:

ECN-C--00-123

Overbeek, J.P.

LCC-studie spoilers voor transportvoertuigen: BIOLICHT project

Petten : ECN, December 2000. – 47 p.

Keywords: Vehicles; Transportation sector; Data compilation; Service life; Reinforced plastics; Composite materials; Cost; Manufacturing; Fibers

ECN-C--01-037

Kamphuis, I.G.; Warmer, C.J. (ECN, Petten (Netherlands));
Sweet, P. (EnerSearch AB, Malmö (Sweden)); Olsson, M. (EnerSearch/Sydkraft Broadband,
Malmö (Sweden)); Akkermans, H. (AKMC, Amsterdam (Netherlands))
*Deliverable D7 : PLC service business model development and market survey instrument (final
version, 29 december 2000). PALAS - Powerline as an Alternative Local AccesS IST-1999-11379*
Petten : ECN, December 2000. – 46 p.

Keywords: Data transmission; Data transmission systems; Electric cables; Business; Market;
Technology assessment; Competition; Internet; Public utilities; Service sector

ECN-C--99-061

Ree, R. van; Gerlagh, T.; Groenendaal, B.J.; Dinkelbach, L.; Doorn, J. van; Hemmes, K.
*Kritische succesfactoren biomassa : identificatie/specificatie kritische succesfactoren bij de ont-
wikkeling en de marktintroductie van biomassaconversiesystemen voor de productie van elektri-
citeit en/of warmte en/of gasvormige/vloeibare secundaire energiedragers*
Petten : ECN, June 2000. – 85 p.

Keywords: Biomass; Availability; Netherlands; Market; Classification; Certification; Wastes;
Cultivation; Biomass plantations; Imports; Bioconversion; Socio-economic factors; Technology
assessment; Comparative evaluations; Combustion; Gasification; Cocombustion; Digestion; Re-
views; Political aspects

ECN-C--99-066

Ree, R. van; Ouden, A.C.B. den; Korobitsyn, M.A.; Dijkstra, J.W.; Mozaffarian, M.
*Restgassen in Nederland : huidige toepassingen en alternatieve energiebesparende toepas-
singsmogelijkheden*
Petten : ECN, December 2000. – 81 p.

Keywords:

ECN-C--99-078

Feber, M.A.P.C. de; Gielen, D.J.
Biomass for greenhouse gas emission reduction task 7 : energy technology characterisation
Petten : ECN, January 2000. – 49 p.

Keywords: Biomass; Technology assessment; Air pollution abatement; Bioconversion; Waste
disposal; Power generation; Heat; Data analysis; Energy efficiency; Carbon dioxide; Removal;
Cocombustion; Gasification; Combustion; Solid electrolyte fuel cells; Fossil-fuel power plants;
Stirling engines; Cogeneration; Pyrolysis; Automotive fuels; Gas fuels; Anaerobic digestion;
Sanitary landfills; Fischer-tropsch synthesis

ECN-C--99-093

Lindenburg, C.; Hegberg, T.
*PHATAS-IV user's manual : Program for Horizontal Axis wind Turbine Analysis and Simulation,
version IV*
Petten : ECN, June 2000. – 135 p.

Keywords: P codes; Horizontal axis turbines; Manuals; Computer program documentation; Dy-
namic loads; Degrees of freedom; Damping; Aerodynamics; Computerized simulation; Computer
calculations; Airfoils

ECN-C--99-102

Neeft, J.P.A.

Teren uit pyrolyse en vergassing van biomassa en reststromen: definities, vorming, eigenschappen, bemonstering en analyse

Petten : ECN, January 2000. – 67 p.

Keywords: Biomass; Wastes; Pyrolysis; Gasification; Sampling; Chemical analysis; Tar; Chemical properties; Physical properties; Chemical composition; Multi-element analysis; Combustion kinetics; Enthalpy; Viscosity; Density; H v; Ph value; Sample preparation

3.2 I-Publications

ECN-I--00-001

Oud, C.; Oudendijk, S.

Optimale regelstrategie voor een microfiltratie-membraaninstallatie : experimenten en procesmodel DWT-installatie

Petten : ECN, January 2000. – 195 p.

Keywords: Membranes; Process control; Filtration; Energy efficiency; Waste processing; Water treatment; Pressure dependence; Simulation; Fouling; Crossflow systems; Functional models; Gels; Precipitation; Energy consumption; Experimental data; Theoretical data; Data analysis; Optimization

ECN-I--00-002

Weeda, M.; Dinkelbach, L.; Dijk, A.L. van; Ligthart, F.A.T.M.; Pierik, J.T.G.; Jochems, A.; Versteeg, A.J.

Application of sustainable energy on the island of Bonaire. Phase 1 : inventory of sustainable energy options

Petten : ECN, December 2000. – 62 p.

Keywords: Islands; Renewable energy sources; Energy policy; Diesel engines; Electric generators; Energy conservation; Wind turbines; Photovoltaic power supplies; Solar collectors; Energy supplies; Technology assessment

ECN-I--00-003

Nauta, J.P.

Duurzame bedrijventerreinen: stand van zaken Programma EE 1999

Petten : ECN, February 2000. – 38 p.

Keywords: Energy efficiency; Industry; Energy parks; Netherlands; Program management; Ecn; Evaluation; Systems analysis; Recommendations; Coordinated research programs

ECN-I--00-004

Kiesewetter, J.; Dril, A.W.N. van

Energetisch ketenbeheer: indirecte energie-effecten als gevolg van productverbeteringen

Petten : ECN, February 2000. – 68 p.

Keywords: Energy analysis; Energy consumption; Material substitution; Service life; Energy efficiency; Production; Process control; Calculation methods

ECN-I--00-005

Rak, Z.S.; Snijders, G.

Extrusion of electroceramics

Petten : ECN, March 2000. – 17 p.

Keywords: Extrusion; Solid electrolyte fuel cells; Composite materials; Binders; Cellulose esters; Water; Nickel oxides; Zirconium oxides; Chemical preparation; Rolling; Sintering; Drying; Casting; Ceramics

ECN-I--01-001

Spoelstra, S.

Techno-economische beoordeling van een foto-elektrochemische reactor

Petten : ECN, December 2000. – 43 p.

Keywords: Hydrogen production; Methanol; Production; Titanium oxides; Electrochemistry; Chemical reactors; Comparative evaluations; Energy efficiency; Emission; Cost benefit analysis; Cost; Carbon dioxide; Fuel consumption; Coal; Photoelectrolysis; Biomass; Wind power; Photovoltaic conversion; Natural gas

ECN-I--01-008

Engelen, R.P.J.

Statistische verwerking meetgegevens en verbetering opstelling PV-combi

Petten : ECN, August 2000. – 32 p.

Keywords: Meetgegevens; PV-combi

3.3 P-Publications

ECN-P--00-001

Sinke, W.C.; Kinderman, R.; Laas, L.J.
20 veelgestelde vragen over zonne-energie
Petten : ECN, October 2000. – 8 p.
Keywords: Zonne-energie; Solar energy

ECN-P--00-002

Scheepers, M.J.J. ; Battjes, J.J.; Beeldman, M.; Boots, M.G.; Burger, H.; Groenendaal, B.J.; Kaal, M.B.T.; Raad, A. de; Rijkers, F.A.M.; Schaeffer, G.J.; Voogt, M.H.; Zoeten - Dartenset, C. de
Energie markt trends 2000
Petten : ECN, June 2000. – 90 p.
Keywords: 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--00-003

Scheepers, M.J.J. ; Battjes, J.J.; Beeldman, M.; Boots, M.G.; Burger, H.; Groenendaal, B.J.; Kaal, M.B.T.; Raad, A. de; Rijkers, F.A.M.; Schaeffer, G.J.; Voogt, M.H.; Zoeten - Dartenset, C. de
Energy market trends in the Netherlands 2000
Petten : ECN, June 2000. – 85 p.
Keywords: 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--00-004

ECN Communicatie
Jaarverslag 1999
Petten : ECN, May 2000. – 46 p.
Keywords: Annual report; Jaarverslag

ECN-P--00-005

ECN Communicatie
Annual report 1999
Petten : ECN, June 2000. – 46 p.
Keywords: Annual report

ECN-P--00-006

Erisman, J.W.
De vliegende geest : ammoniak uit de landbouw en de gevolgen voor de natuur
Petten : ECN, December 2000. – 271 p.
Keywords: Ammoniak; Landbouw

ECN-P--00-007

Andriessse, C.D.
De Republiek der Kerneleerden
Petten : ECN, December 2000. – 272 p.
Keywords: Geschiedenis; Kernenergie

ECN-P--00-008

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

Metz, B.; Davidson, O.R.; McGrory, L.V.W. (eds.)

Methodological and technical issues in technology transfer : a special report of the IPCC working group III

Petten : ECN, December 2000. – 466 p.

Keywords: Climate change; Technology transfer

3.4 R-Publications

ECN-R--00-001

Khlystov, A.; Weijers, E.P.; Kos, G.P.A.; Bulk, W.C.M. van den; Even, A.; Brink, H.M. ten; Erisman, J.W.

Characterisation of particulate matter in urban air: instrumentation development and experimental results

Petten : ECN, April 2000. – 47 p.

Keywords: Particulates; Air quality; Emission; Urban areas; Public health; Sampling; Quantitative chemical analysis; Air pollution; Aerosols; Road transport; Air samplers; Exhaust gases; Temperature dependence; Accuracy; Aerosol monitoring; Microbalances; Ammonium nitrates; Soot; Dynamometers

ECN-R--00-002

Jehee, J.N.T.; Kamphuis, I.G.; Kok, J.K.; Selow, E.R. van; Verduijn, B.

PROMON: dynamische procesmonitoring in de procesindustrie

Petten : ECN, December 2000. – 83 p.

Keywords: Asphalts; Production; Solar cells; Manufacturing; Energy efficiency; Process control; Data acquisition; Data processing; Data analysis; Data compilation

3.5 RX-Publications

ECN-RX--00-001

Beurskens, H.J.M.

Offshore wind turbine systems in Europe (Offshore Windkraftanlagen in Europa)

Petten : ECN, January 2000. – 13 p.

Keywords: Wind turbines; Offshore sites; North sea; Reviews; Wind turbine arrays; Research programs; Demonstration programs; Capacity

ECN-RX--00-002

Hendriks, H.B.; Lindenburg, C.; Engelen, T.G. van; Pierik, J.T.G.; Bulder, B.H.; Heijdra, J.J.

Contributions to the European seminar 'Offshore wind energy in Mediterranean and other European seas': OWEMES 2000, April 13-14, 2000, Siracuse - Sicily

Petten : ECN, April 2000. – 45 p.

Keywords: Wind turbine arrays; Offshore sites; Electrical equipment; Electric generators; Cost estimation; Permanent magnets; Speed regulators; Dc systems

ECN-RX--00-003

Rak, Z.S.

Advanced forming techniques in ceramics

Petten : ECN, May 2000. – 18 p.

Keywords: Ceramics; Materials working; Cost; Slip casting; Casting; Molding; Powder metallurgy; Flocculation; Comparative evaluations

ECN-RX--00-004

Ribberink, J.S.; Zutt, J.G.M.; Rabou, L.P.L.M.; Beckers, G.J.J.; Baijens, C.A.W.; Luttikholt, J.J.M.

Stirling based micro co-generation system for single households

Petten : ECN, April 2000. – 9 p.

Keywords: Stirling engines; Cogeneration; Households; Space heating; Water heating; Gas burners; Ceramics; Heat transfer; Nitrogen oxides; Emission; Energy efficiency; Design; Performance

ECN-RX--00-005

Bossert, R.H.; Vaan, M.J.M. de ; Tool, C.J.J.; Roosmalen, J.A.M. van; Wentink, C.H.M.

Thin-film solar cells: technology evaluation and perspectives

Petten : ECN, May 2000. – 58 p.

Keywords: Silicon solar cells; Thin films; Technology assessment; Silicon; Crystal structure; Amorphous state; Netherlands; Evaluation; Payback period; Toxicity; Cost; Copper selenides; Indium selenides; Gallium selenides; Cadmium tellurides; Organic solar cells; Dyes; Copper compounds; Indium sulfides; Gallium sulfides; Copper sulfides; Risk assessment; Comparative evaluations; Photovoltaic power supplies; Deposition; Energy efficiency; Physical properties; Manufacturing

ECN-RX--00-006

Römer, J.C.

Het toepassen van behoefte-ventilatie in energiezuinige woningen

Petten : ECN, November 2000. – 4 p.

Keywords: EPC; Ventilatie

ECN-RX--00-007

Biomass for energy and industry: ECN contributions to the 1st world conference and exhibition on biomass for energy and industry

Petten : ECN, June 2000. – 41 p.

Keywords: Tar; Standardization; Organic compounds; Biomass; Producer gas; International agreements; Abundance

ECN-RX--00-008

Borg, N.J.C.M. van der; Rössler, E. ; Visser, E.B.M.

A traffic noise barrier equipped with 2160 AC-modules

Petten : ECN, May 2000. – 3 p.

Keywords: Photovoltaic power supplies; Ac systems; Roads; Noise pollution control; Inverters; Performance; Energy efficiency; Photovoltaic conversion

ECN-RX--00-009

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

Amorphous silicon modules on facades with non-optimal orientations

Petten : ECN, May 2000. – 3 p.

Keywords: Silicon; Amorphous state; Homojunctions; Silicon solar cells; Monitoring; Performance; Photovoltaic power supplies; Office buildings; Solar radiation; Electric conductivity; Solar cell arrays; Energy efficiency

ECN-RX--00-010

Bultman, J.H.; Weeber, A.W.; Brieko, M.W.; Hoornstra, J.; Burgers, A.R.; Dijkstra, J.A.; Tip, A.C.; Schuurmans, F.M.

Pin-up module: a design for higher efficiency, easy module manufacturing and attractive appearance

Petten : ECN, May 2000. – 4 p.

Keywords: Energy efficiency; Manufacturing; Design; Silicon solar cells; Fill factors; Energy losses; Spray coating

ECN-RX--00-011

Bultman, J.H.; Kinderman, R.; Hoornstra, J.; Koppes, M.

Single step selective emitter using diffusion barriers

Petten : ECN, May 2000. – 3 p.

Keywords: Silicon solar cells; Diffusion barriers; Screen printing; Drying; Doped materials; Silicon oxides; Electric conductivity; Concentration ratio; Phosphorus; Diffusion; Spectrally selective surfaces

ECN-RX--00-012

Burgers, A.R.; Bultman, J.H.; Beneking, C.; Nositschka, W.A.; Voigt, O.; Kurz, H.

Silicon solar cells textured by reactive ion etching with natural lithography

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon solar cells; Texture; Etching; Silicon; Polycrystals; Masking; Energy efficiency; Fill factors; Electric conductivity

ECN-RX--00-013

Gutjahr, A.; Grasso, C.; Schiermeier, S.E.A.; Keitz, A. von; Fung, P.F.

Crystalline silicon growth on silicon nitride and oxynitride substrates for thin film solar cells

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon; Silicon solar cells; Crystal growth; Silicon nitrides; Substrates; Liquid phase epitaxy; Sintering; Casting; P-type conductors; Gadolinium; Aluminium; Doped materials; Grain size; Layers

ECN-RX--00-014

Heide, A.S.H. van der; Schönecker, A.; Wyers, G.P.; Sinke, W.C.

Mapping of contact resistance and locating shunts on solar cells using resistance analysis by mapping of potential (RAMP) techniques

Petten : ECN, May 2000. – 4 p.

Keywords: Mapping; Electric conductivity; Silicon solar cells; Screen printing; Fill factors; Detection; Semiconductor resistors

ECN-RX--00-015

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

Kern, R.; Herber, J.; Schill, C.; Schubert, M. (FMF, Freiburg (Germany)); Meyer, A.; Meyer, T. (Solarix S.A. (Switzerland)); Uhlandorg, I.; Holzbock, J.; Niepmann, R. (INAP (Germany))

Long-term stability of dye sensitized solar cells for large area power applications (LOTS-DSC)

Petten : ECN, May 2000. – 7 p.

Keywords: Stability; Dyes; Organic solar cells; Ultraviolet radiation; Illuminance; Aging; Magnesium iodides; Thermal stresses; Solvents; Chemical composition; Additives; Nitriles; Fill factors; Energy efficiency; Electric conductivity; Calcium iodides; Tbp

ECN-RX--00-016

Hoornstra, J.; Moor, H.H.C. de; Weeber, A.W.; Wyers, G.P.

Improved front side metallization on silicon solar cells with stencil printing

Petten : ECN, May 2000. – 4 p.

Keywords: Silicon solar cells; Metallurgy; Surface coating; Screen printing; Layers; Comparative evaluations; Line widths

ECN-RX--00-017

Hylton, J.D.; Burgers, A.R.; Sinke, W.C.

Light trapping in alkaline texture etched crystalline silicon wafers

Petten : ECN, May 2000. – 4 p.

Keywords: Trapping; Etching; Silicon; Texture; Spectral reflectance; Electric conductivity; Atomic force microscopy; Encapsulation

ECN-RX--00-018

Lasschuit, P.E.; Westra, C.A.

Financing solar home systems: lessons from Swaziland

Petten : ECN, May 2000. – 3 p.

Keywords: Swaziland; Photovoltaic power supplies; Houses; Households; Financing; Low income groups; Namibia; Botswana; Financial incentives; Solar energy

ECN-RX--00-019

Rooij, P.M.; Eikelboom, J.A.; Heskes, P.J.M.

Reliability testing of grid connected PV inverters

Petten : ECN, May 2000. – 4 p.

Keywords: Inverters; Interconnected power systems; Reliability; Photovoltaic power supplies; Service life; Field tests; Bench-scale experiments; Temperature distribution

ECN-RX--00-020

Sommeling, P.M.; Späth, M.; Kroon, J.M.; Kinderman, R.; Roosmalen, J.A.M. van

Flexible dye-sensitized nanocrystalline TiO₂ solar cells

Petten : ECN, May 2000. – 5 p.

Keywords: Organic solar cells; Titanium oxides; Dyes; Foils; Flexibility; Glass; Substrates; Performance; Fill factors; Electric conductivity

ECN-RX--00-021

Soppe, W.J.; Duijvelaar, B.G.; Schiermeier, S.E.A.; Weeber, A.W.; Steiner, A. ; Schuurmans, F.M.

A high throughput PECVD reactor for deposition of passivating SiN layers

Petten : ECN, May 2000. – 4 p.

Keywords: Chemical vapor deposition; Silicon nitrides; Layers; Passivation; Silicon solar cells; Energy efficiency; Charge carriers; Hydrogenation; Microwave heating; Plasma heating; Hydrogen; Silanes; Ammonia

ECN-RX--00-022

Tool, C.J.J.; Schiermeier, S.E.A.; Gutjahr, A.; Laas, L.J.; Moor, H.H.C. de

LPE-deposition of crystalline silicon layers on recrystallised silicon-based ceramics

Petten : ECN, May 2000. – 3 p.

Keywords: Liquid phase epitaxy; Silicon; Layers; Ceramics; Silicon compounds; Recrystallization; Grain boundaries

ECN-RX--00-023

Wienke, J.A.; Brieko, M.W.; Heide, A.S.H. van der; Winkler, M.; Tober, O.; Penndorf, J.

Contacting and interconnection of CISCuT material

Petten : ECN, May 2000. – 4 p.

Keywords: Copper sulfides; Indium sulfides; Copper selenides; Indium selenides; Manufacturing; Electric conductivity; Ultrasonic welding; Soldering

ECN-RX--00-024

Ouden, A.C.B. den

PRODESIGN: a program for optimisation and dimensioning of energy conversion systems

Petten : ECN, June 2000. – 13 p.

Keywords: Energy conversion; Optimization; Size; Direct energy converters; Carbon dioxide; Total energy systems; Energy consumption; Systems analysis; Linear programming; Energy demand; Supply and demand; P codes

ECN-RX--00-025

Boots, M.G.; Rijkers, F.A.M.

Modelling the role of transmission companies in the downstream European gas market

Petten : ECN, July 2000. – 25 p.

Keywords: Gas utilities; Market; G codes; Prices; Natural gas distribution systems; Tariffs; Competition; Vertical integration; Nonlinear programming; Western europe; Optimization; Households; Industry; Power generation

ECN-RX--00-026

Boerrigter, H.; Daey Ouwens, C.; Doorn, J. van; Drift, A. van der; Hofmans, H.; Huijnen, H.; Kersten, S.R.A.; Kiel, J.H.A.; Moonen, R.H.W.; Mozaffarian, M.; Neeft, J.P.A.; Oosting, T.P.; Uil, H. den; Visser, H.J.M.; Zwart, R.W.R.

Contributions ECN Biomass to 'Developments in thermochemical biomass conversion' conference: 17-22 September 2000, Tyrol, Austria

Petten : ECN, July 2000. – 87 p.

Keywords: Biomass; Wastes; Power generation; Heat; Liquid fuels; Production; Energy efficiency; Gasification; Fischer-tropsch synthesis; Electricity; Diesel fuels; Cost; Catalysts

ECN-RX--00-027

Battjes, J.J.; Rijkers, F.A.M.

Can Dutch co-generation survive threats of the liberalisation of the energy markets?

Petten : ECN, July 2000. – 18 p.

Keywords: Cogeneration; Netherlands; Market; Competition; Energy policy; Electricity; Natural gas; Economic impact; Investment; Financial incentives

ECN-RX--00-028

Seebregts, A.J.; Kram, T.; Schaeffer, G.J.; Bos, A.J.M.

Endogeneous learning and technology clustering: analysis with MARKAL model of the Western European energy system

Petten : ECN, March 2000. – 31 p.

Keywords: Energy system analysis; Energy model; CO2 emission reduction; Endogenous technological learning

ECN-RX--00-029

Sommeling, P.M.; Rieffe, H.C.; Roosmalen, J.A.M. van; Schönecker, A.; Kroon, J.M.; Wienke, J.A.; Hinsch, A.

Spectral response and IV-characterization of dye-sensitized nanocrystalline TiO₂ solar cells

Petten : ECN, September 2000. – 12 p.

Keywords:

ECN-RX--00-030

Hoornstra, J.; Bultman, J.H.; Moor, H.H.C. de; Weeber, A.W.; Wyers, G.P.

Advanced metallization: from present to future

Petten : ECN, September 2000. – 6 p.

Keywords:

ECN-RX--00-031

Warmer, C.J.; Jehee, J.N.T.; Kamphuis, I.G.

A workbench in support of energy management services

Petten : ECN, October 2000. – 21 p.

Keywords: Energy management; Thermal comfort; Commercial buildings; Energy management systems; Data analysis; Energy consumption; Load analysis; Energy conservation

ECN-RX--00-032

Janssen, G.J.M.

A phenomenological model of water transport in a proton-exchange-membrane fuel cell

Petten : ECN, October 2000. – 46 p.

Keywords:

ECN-RX--00-033

Janssen, G.J.M.; Overvelde, M.L.J.

Water transport in the proton-exchange-membrane fuel cell: measurements of the effective drag coefficient

Petten : ECN, October 2000. – 33 p.

Keywords:

ECN-RX--00-034

Corten, G.; Snel, H.

Optimisation of vortex generator locations. Insects cause double stall. Inviscid stall model. Some thoughts and preliminary results on wake modelling and tip corrections

Petten : ECN, October 2000. – 43 p.

Keywords:

ECN-RX--00-035

Ree, R. van; Korbee, R.; Lange, T.J. de

Biomass cofiring potential and experiences in the Netherlands

Petten : ECN, November 2000. – 18 p.

Keywords:

ECN-RX--00-036

Christie, G.M.; Nammensma, P.; Huijsmans, J.P.P.

Status of anode supported-thin electrolyte ceramic SOFC component development at ECN

Petten : ECN, October 2000. – 9 p.

Keywords: Anodes; Solid electrolyte fuel cells; Solid electrolytes; Ceramics; Manufacturing; Casting; Screen printing; Performance; Cost; Bending; Coordinated research programs

ECN-RX--00-037

Rietveld, G.; Nammensma, P.; Ouweltjes, J.P.; Siewers, E.J.

Status of SOFC component development at ECN

Petten : ECN, October 2000. – 7 p.

Keywords: Anodes; Solid electrolyte fuel cells; Solid electrolytes; Ceramics; Manufacturing; Casting; Screen printing; Performance; Cost; Bending; Coordinated research programs

ECN-RX--00-038

Mozaffarian, M.; Zwart, R.W.R.

Production of substitute natural gas by biomass hydrogasification

Petten : ECN, November 2000. – 15 p.

Keywords: High btu gas; Biomass; Hygas process; Gasification; Hydrogen storage; Thermodynamics; Energy efficiency; Hydrogen production; Chemical composition

ECN-RX--00-039

Slanina, J.; Brink, H.M. ten; Otjes, R.P.; Even, A.; Jongejan, P.A.C.; Khlystov, A.; Waijers-Ijpelaar, A. (ECN, Petten (Netherlands));

Hu, M. (Peking University, Center of Environmental Sciences); Lu, Y. (Iowa State University)

The continuous analysis of nitrate and ammonium in aerosols by the Stream Jet Aerosol Collector (SJAC) : extension and validation of the methodology

Petten : ECN, November 2000. – 28 p.

Keywords: Nitrates; Ammonia; Aerosols; Aerosol monitoring; Air samplers; Validation; Quantitative chemical analysis; Ammonium nitrates; On-line measurement systems; Scavenging; Quality assurance; Quality control; Comparative evaluations; Field tests

ECN-RX--00-040

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

Cf/SiC composites by a novel manufacturing method

Petten : ECN, December 2000. – 21 p.

Keywords: Carbon fibre; Composite material; Pressure infiltration method

ECN-RX--00-041

Kram, T.; Seebregts, A.J.; Schaeffer, G.J. (ECN, Petten (Netherlands));

Barreto, L.; Kypreos, S. (Paul Scherrer Institute, Villigen (Switzerland)); Messner, S.; Schrattenholzer, L. (IIASA, Laxenburg (Austria))

Technology dynamics in energy systems models with perfect foresight

Petten : ECN, March 2000. – 17 p.

Keywords: Energy models; Systems analysis; Methodology; Endogenous technological learning

ECN-RX--99-031

Burgers, A.R.; Bultman, J.H.; Tip, A.C.; Sinke, W.C.

Metallisation patterns for interconnection through holes

Petten : ECN, February 2000. – 6 p.

Keywords: Silicon solar cells; Silicon; Design; Energy efficiency; Electric conductivity; P-n junctions

3.6 B-Publications

ECN-B--00-002

ECN Biomass

Fotobioreactortechnologie voor algenteelt

Petten : ECN, February 2000. – 2 p.

Keywords:

ECN-B--00-004

ECN Wind Energy

Wij hebben iets te vieren

Petten : ECN, February 2000. – p.

Keywords:

ECN-B--00-006

ECN Solar Energy

R&D of solar cells and modules

Petten : ECN, April 2000. – 2 p.

Keywords:

ECN-B--00-007

ECN Biomass

Photobioreactor technology for microalga cultivation

Petten : ECN, April 2000. – p.

Keywords:

ECN-B--00-009

ECN Clean Fossil Fuels

Gas en brandstof analyse

Petten : ECN, April 2000. – 2 p.

Keywords:

ECN-B--00-015

ECN Wind Energy

Ninth international course on the implementation of wind energy

Petten : ECN, May 2000. – p.

Keywords:

ECN-B--00-017

ECN Biomass

Pryomaat

Petten : ECN, May 2000. – 2 p.

Keywords:

ECN-B--00-018

ECN Biomass

Pyromaat

Petten : ECN, May 2000. – 2 p.

Keywords:

ECN-B--00-019

ECN Biomass

Multipurpose thermal converter 'WOB'

Petten : ECN, May 2000. – 2 p.

Keywords:

ECN-B--00-026

ECN Policy Studies

ECN Policy Studies

Petten : ECN, June 2000. – 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
Miscellaneous serie	15	9	8	12	20	5	1	0	0	0	0
CX publications Confidential contract reports	71	97	103	128	166	83	58	113	148	131	123
C publications Contract reports	62	82	86	80	71	106	96	77	88	83	104
I publications Internal reports	47	71	50	46	43	41	48	35	40	21	7
P publications Reports for broad audience	0	0	1	0	1	1	1	0	0	0	8
R publications Research reports	8	10	11	16	24	31	14	8	24	4	2
RX publications Contributions to magazines/conf.	90	115	77	108	117	55	64	66	67	35	42
B publications Leaflets	25	22	21	16	3	15	27	0	0	7	10
Total	323	413	362	408	446	337	309	187	219	153	175

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