FINANCIAL AND TECHNICAL REPORTING
as a regulatory tool

ENERGY EFFICIENCY AND MARKET DEPARTMENT 1997
Financial and technical reporting form the basis of the NVE’s control and regulation of network activities as a natural monopoly. Network owners are obliged to report activities related to transmission of electricity. In addition to data concerning monopoly activities, data is collected concerning the production and sale of electricity. The NVE has elected to use data processing for collection of data, and the data is stored in a database.

The reports to the NVE of accounting data for 1994 and 1995 have been of fundamental importance for the implementation of a new regulation model, with regard to both efficiency requirements and the establishment of permitted income. The database also contains figures that are useful in connection with disputes over transmission tariffs.

This publication is also available on NVE’s official home page on the Internet: http://www.nve.no/english
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1. INTRODUCTION

The main responsibility of the Norwegian Water Resources and Energy Administration (NVE) as regulator is to ensure that tariffs for transmission of electricity reflect the cost of efficient operation and maintenance of the network and of investments in the network. Regulation of approximately two hundred network companies requires a regulation model and control system structured so as to enable efficient surveillance. Financial and technical reporting form the basis of the NVE’s control and regulation of network activities as a natural monopoly. Network owners are obliged to report activities related to transmission of electricity. In the case of each network company, information must be provided concerning cost structure, delivery terms and technical data.

With effect from 1 January 1997, the NVE has introduced the regulation of network activities based on income frameworks and financial incentives. The income frameworks are adapted to the actual level of costs of each utility, and are based on audited accounting figures for 1994 and 1995 reported to the NVE. From 1998, individual efficiency requirements based on the efficiency measurements of the NVE will be included in the framework.

The efficiency analysis model used by the NVE to measure the cost effectiveness of the network companies is based on reports submitted by the companies themselves.

A set of key figures for each of the network companies calculated by the NVE on the basis of the reports has been used to develop a benchmarking program that enables the companies to make their own analyses, and to make their own decisions about which companies and key figures to compare.

In addition to data concerning monopoly activities, data is collected concerning the production and sale of electricity. Approximately sixty companies are pure marketers or producers. The NVE wishes to keep track of the development within electricity supplies, with regard both to the industry as a whole and to individual electricity utilities.

2. BACKGROUND

2.1 Regulation of electricity monopolies in Norway and the role of the NVE

The Norwegian Energy Act of 1991 sets out the legal framework for the monopoly control of the Norwegian network companies. The Energy Act turned the production and sale of electricity into a market-based activity. The transmission of electricity is a natural monopoly, and therefore subject to regulation. The Energy Act gives the Norwegian Water Resources and Energy Administration (NVE) delegated powers. Every network company that offers transmission of electricity – to consumers or others – is required to hold a concession issued by the NVE. The concession holders are all obliged to offer tariffs of transmission which comply with specified rules.
The price of electricity is thus decided by the market, while it is the NVE's main task as monopoly regulator to ensure that transmission tariffs of electricity at all times reflect the cost of the efficient operation and maintenance of the networks and their investments. Efficiency is a key concept in this respect.

The regulation of monopolies involves two main activities:

- the design of a regulatory system – drawing up regulations
- control of the extent to which these regulations are complied with

Once the regulatory system has been implemented, most of the resources available will be used for control.

Approximately twenty members of the NVE's staff are directly involved in work associated with the regulation of monopolies.

### 2.2 Structure of the Norwegian electricity sector

The transmission and distribution of electricity in Norway is carried out by a large number of companies. Transmission is carried out at three different levels: via the main network, regional networks and distribution networks. Statnett SF, a state-owned enterprise, owns by far the largest part of the main network and is responsible for tariffs, system operations and the development of the main network system. Some forty other network companies (regional companies and producers) each own small sections of the main network. Statnett SF has a leasing agreement with these forty companies, and the leasing costs have historically been passed on to the consumers.

Between fifty and sixty companies are involved in the transmission of electricity at the regional level. These companies are often vertically integrated in the sense that they also produce and sell electricity. They are also often involved in the distribution of electricity at the local level. The regional networks are often owned by local and/or regional authorities.

Electricity is distributed locally by around two hundred companies, often owned by the local municipalities. These companies vary greatly in size and other characteristics. The average distribution company has approximately five thousand customers. Some of the distribution companies have local production. The majority of the distribution companies are also engaged in the sale of electricity, mainly to local customers.

### 2.3 Monopoly regulation from 1992 to 1996

The NVE's regulation has, since 1992, been based on a "cost-of-service" concept. When setting their tariffs, the network companies have been allowed to recover actual costs, including the cost of capital. Network costs generally consist of the following cost elements:
• operation and maintenance costs
• depreciation on invested capital
• return on capital employed, defined as the book value or depreciated historical cost of the network capital. Capital employed also includes working capital costs, estimated to be 1 per cent of the network capital. The capital employed therefore comprises both debt and equity. Since 1993, the NVE has determined the maximum permitted return on capital employed.

In 1993, which was the first year that network companies were required to report accounting data to the NVE, there were considerable variations in the interpretations of how working capital should be calculated. For the NVE as regulator, it was essential that the electricity utilities adopted the same procedure for calculating working capital. The use of accounting figures for current assets and short-term debt in the calculation of working capital easily enable individual electricity utilities to increase or reduce the balance figures to enhance the basis for earnings. Working capital was therefore set to a 1 per cent addition to the average fixed assets.

• line losses, i.e. physical losses in MWh, valued at the pool price of electricity

Mainly as a result of accidental variations in temperature, the actual income from tariffs may exceed or drop below the level required to recover actual total costs, as defined above. As part of the regulatory system, the network companies are obliged to repay excessive income – windfall profit – to consumers. Likewise, if actual income is not sufficient to recover all costs, tariffs can be increased in later years to make up for the difference. The network company is therefore not subject to financial risk as a result of temporary fluctuations in actual income.

2.4 New regulation model from 1997

The primary goal of the authorities and the NVE is to ensure that electricity is produced and transmitted at the minimum cost to the community as a whole. The NVE strongly believes that both the situation prior to the Energy Act and the regulatory system practised after the implementation of the Energy Act have led to inefficiencies in the transmission and distribution of electricity.

In the NVE's view, the regulatory system had to be changed if this potential for efficiency improvements was to be realized. The NVE has for this reason chosen to focus on costs and profit in the new regulatory system.

As of 1 January 1997, the NVE has introduced an incentive-based regulatory model. The basic element in this type of regulatory system is that the permitted recovered cost is, to some extent, separated from the actual costs. Only by reducing their costs will the network owners be able to increase profit above a certain level, and thereby improve their ability to reach their ultimate goals. Under the new system, the network owners are no longer guaranteed full cost recovery. By establishing a system whereby each network owner is allotted a permitted total income, the profit will in principle be the difference between this permitted income and the actual costs. To avoid excessive profits, there is an absolute restriction on return on capital. Likewise there is also a minimum rate of
return, so that no network company can run into an actual deficit. This regulatory system treats each network owner individually. Reported financial data for 1994 and 1995 for each network owner have been used as a basis for the new model. The frameworks have been so defined that, from 1997, the electricity utilities must make annual reductions in their costs in relation to a general percentage fixed by the NVE. In addition to this, from 1998, individual efficiency requirements will be stipulated. We refer to the NVE paper, "Incentive-based regulation of electricity monopolies in Norway—background, principles and directives, implementation and control system" and the NVE publication, "Effektivitet i distribusjonsnettene 1995" (The efficiency of the distribution networks in 1995).

3. REPORTING FINANCIAL ACCOUNTS AND NETWORK DATA

3.1 The purpose of reporting

The implementation of the regulation model outlined above, coupled with the need for control to ensure compliance with the established guidelines for calculation of transmission tariffs, gives rise to a need for financial and technical data concerning the activities of the electricity utilities.

As described above, the companies responsible for transmission of electricity are often also engaged in other activities, primarily involving the production and sale of electricity. In order to be able to check the figures for monopoly activities and activities exposed to competition against the official annual accounts, assess the scope of each activity, and reveal any cross-subsidization between activities regulated by monopolies and other areas of activity, the NVE also requires information concerning activities subject to competition. In addition to procuring information needed for regulating monopolies, the NVE also gathers data from electricity utilities that are not involved in transport of electric power, but are engaged in sale and production. This is because, in addition to regulating the functioning of the network, there is a wish to monitor the electricity market with regard to price trends, market access and financial results in relation to both the sale and the production of electricity.

3.2 Historical background

Prior to the introduction of the Energy Act in 1991, the electricity utilities in Norway followed varying accounting practices. Since most electricity utilities were owned by municipalities, the municipal accounting regulations were often applied. These regulations are based on cash flow accounting, and do not include depreciation as an element of costs. The regulations therefore differ from normal business accounting practices.
The Energy Act required that all electricity utilities should keep accounts in accordance with the provisions of the Companies Acts. It was further required that separate accounts should be kept for the monopoly part of the electricity utility.

This change in accounting practices was a major transition for many electricity utilities. However, the uniform accounting rules and the keeping of separate accounts for the monopoly function were important preconditions for the monopoly regulation that the NVE was required to carry out.

On this basis, the NVE therefore set up for all the electricity utilities identical specifications of the accounting data that was required.

3.3 Statutory basis

The duties of licence holders in relation to the NVE as regulator are laid down by statute. The electricity utilities have been obliged to send accounts to the NVE since 1993. The licence holders are required to deliver to the NVE accounts that have been kept in accordance with the provisions of the Companies Act, the Accounting Act and with generally accepted accounting principles. It is also required that activities subject to competition and monopoly activities shall be kept separate in the accounts. In addition to this, the Act makes the NVE responsible for issuing further guidelines for the reporting of accounting data. All holders of sales licences are required to report activities related to the sale and transmission of electricity.

The reports of accounting data are also sent to Statistics Norway. The structure and content of the reports must therefore also satisfy the needs of Statistics Norway. The Official Statistics Act and regulations laid down by the Ministry of Finance contain provisions relating to administrative data systems and the coordination of official statistics. Statistics Norway requires figures relating to electricity statistics, national accounts and financial statistics.

4. THE STRUCTURE OF THE FINANCIAL AND TECHNICAL REPORTING

The NVE’s reporting requirements are primarily adapted to the requirements of the Companies Act and the Accounting Act, and shall comply with generally accepted accounting principles. The NVE also makes requirements in accordance with regulations pursuant to the Energy Act, and issues further guidelines for the reporting of accounting data.

The requirements made by the NVE in its guidelines are more extensive than is required by the accounting legislation. This is a result of the need to establish conditions for the NVE’s control and regulation of network monopolies and surveillance of the market. The NVE’s need for information is determined by the factors included in the regulation model outlined above, and the structure of technical and financial reporting is based on satisfying this need.
The structure of accounts reporting has been adapted as far as possible to standard accounts chart and bookkeeping concepts. In most areas, the NVE has avoided making bookkeeping requirements contrary to or more extensive than those of the Companies Act, the Accounting Act and generally accepted accounting principles.

The reporting has been structured in such a way that the figures reported for the company as a whole shall agree with the company's official accounts.

The main structure of the accounts reporting consists of the profit and loss account and balance sheet, notes, appendices, and a control view. Several of the items in the profit and loss account and balance sheet have associated notes, where various components of the item shall be specified or further information concerning calculation principles shall be given. The appendices are separate forms where information concerning elements not associated with the accounts themselves are registered. This part of the reporting includes technical data necessary for efficiency measurements and calculation of key figures.

The specification in some of the appendices and notes is made on the basis of the data requirements of Statistics Norway. Only items associated with the NVE's requirements are described in the present document.

4.1 Division into segments

While the production and sale of electricity are activities subject to competition, where the price is decided by the market, the price of transmission of electricity is regulated. In accounts reporting to the NVE, the licence holder shall therefore keep activities subject to competition and monopoly activities in separate segments. This applies both to the profit and loss account and to the balance sheet.

The information in the report shall be divided into the following segments:

Electricity sales
The segment "Electricity sales" includes the sale and purchase of electricity.

Electricity production
The segment "Electricity production" includes electricity production at the company's own plant and holdings in other producers. The segment may include wholesale sales of electricity and sales to consumers if the company does not have its own sales department.

Main network
The segment "Main network" includes both the electricity utilities' hire of network to Statnett and their own operation of the network.

Regional networks
The segment "Regional networks" includes the network level between the main network and distribution networks. The profit or loss shall be shown even if the electricity utility does not have external customers at this network level. If the electricity utility does not
have a separate tariff for such networks, the income shall be shown as a transfer to the company's own distribution network.

Distribution networks
The segment “Distribution networks” includes the electricity utility’s networks from and including 22 / 11 kV high-voltage networks as far as the customer, but not including the meters of individual subscribers.

The segments “Main network”, “Regional networks” and “Distribution networks” constitute monopoly activities. The distribution of costs between main, regional and distribution networks shall be non-discriminatory.

Other activities
The segment “Other activities” includes any other activities carried out by the company, such as activities in connection with district heating, work carried out for other companies (contractor services), road lighting, installation, television cables, energy efficiency measures subject to competition, hire, sale of consultancy services or other business activities.

The profit and loss account and balance sheet also have separate columns for:

Joint activities
“Joint activities” is not a separate segment. Costs shall as far as possible be related directly to the segments. Joint costs shall be distributed between all the segments. The column for joint activities shall be used for values that cannot be directly entered in the individual segments. Joint costs shall be distributed as objectively as possible, and are expected to remain stable over time. The value entered for profit/loss shall be zero.

Reconciliation / elimination
Internal supplies entered as income in one segment shall as a rule be entered as expenditure in another segment. Such amounts shall be eliminated in the reconciliation column in the lines for receiving and supplying unit. This column shall also be used when other factors necessitate reconciliation against the financial account. Reconciliation shall be carried out in such a way that the main figures in the report’s “Total for company” column balance with the main figures in the official annual report.

Total for company
“Total for company” is the sum of the different segments corrected for any internal transactions. The value in “Total for company” shall agree with the financial account of the legal unit.

4.2 The profit and loss account
The holder of the sales licence shall make a full report of the profit and loss account for the company as a whole in accordance with the Companies Act and the Accounting Act. In the report, operating profit/loss shall be distributed between the segments Electricity sales, Electricity production, Main network, Regional networks, Distribution networks
and Other activities, while other profit/loss calculations shall be made for the company as a whole.

The following items are included in the specification of operating profit/loss:

Operating revenues:
• Sale of electricity – consumers/wholesale/district heating
• Profits from trade in derivatives
• Sale of transmission services/income from rent
• Windfall profit/loss repaid to customers including interest
• Allocation for current year – windfall profit/loss
• Income from subscriptions, metering, settlements
• Other energy efficiency income
• Work for other companies
• Income from road lighting
• Income from installations
• Other goods and services
• Income from rent of real property
• Earnings from disposal of capital assets
• Other operating revenues
• Capitalization of own labour costs
• Capitalization of goods costs
• Internally priced services

Operating costs:
• Purchase of electricity
• Losses on trade in derivatives
• Line loss
• Purchase of transmission and system services
• Other goods purchases
• Salaries and other personnel costs
• Pension costs
• Other operating costs
• Real property tax
• Depreciation
• Bad debts
• Stock increase/reduction
• Depreciation of capital assets
• Internally priced services

The companies shall also report figures for financial income and expenditure, extraordinary income and expenditure and disposal of the annual surplus and deficit for the company as a whole.
4.3 The balance sheet

The holder of the sales licence shall make a full report of the balance sheet in accordance with the Companies Act and the Accounting Act for the company as a whole.

In the balance sheet are included the following items:

Assets:
- Current assets:
  - Cash in hand
  - Bank deposits
  - Accounts receivable
  - Claims, internal
  - Stock
  - Windfall loss
  - Accrued interest on windfall loss
  - Shares
  - Bonds and other securities
  - Other current assets, non-interest bearing
  - Other current assets, interest bearing
- Financial assets (Capital assets):
  - Shares
  - Shares in wholly and partly owned electricity utilities
  - Bonds and other securities
  - Deferred tax advantage
  - Other long-term claims
- Fixed assets:
  - Plant under construction
  - Patents, goodwill, activated costs
  - Watercourse regulations and rights
  - Power plants
  - District heating plant, pipelines
  - Main network
  - Regional networks
  - Distribution networks
  - Customer-specific equipment
  - Means of transport
  - Fixtures, tools, computer equipment
  - Buildings
  - Sites
  - Other
Liabilities:

- **Short-term debt:**
  - Accounts payable
  - Bank overdrafts
  - Windfall profit from transmission services
  - Accrued interest on windfall profit
  - Internal short-term debt, non-interest bearing
  - Unpaid public taxes
  - Accrued unpaid costs
  - Tax payable
  - Prepayments from customers
  - Allocations to reserves
  - Allocated to dividends
  - Other short-term debt, non-interest bearing
  - Other short-term debt, interest bearing

- **Long-term debt:**
  - Deferred tax
  - Debenture loans
  - Accounting allocations
  - Mortgage loans
  - Other long-term debt, external
  - Long-term debt, internal

- **Capital and reserves:**
  - Share capital
  - Statutory reserve/cooperative share capital
  - Revaluation reserve
  - Retransfer fund
  - Distributable reserves/uncovered losses
  - Other capital and reserves

Fixed assets shall be classified in the reports according to segments. Current assets and short-term debt shall be partly distributed between the different segments, while the remaining balance items shall only be reported for the company as a whole.

### 4.4 Notes and appendices

A number of the items in the profit and loss account and balance sheet have associated notes, where different components of the item shall be specified or further information concerning calculation principles shall be given. In the case of some of the items, values shall be registered in the note and transferred automatically to the profit and loss account and balance sheet.
Calculation of windfall profit/loss
During the period from 1992 to 1996, transmission tariffs, as mentioned above, were to be fixed so that the costs of the network owners were absorbed, while ensuring a reasonable yield on invested capital. The rate of return is fixed annually by the NVE. Earnings in excess of a reasonable yield are referred to as windfall profit, and are to be repaid to customers in the form of reduced tariffs or cash repayments. A lower than reasonable yield is referred to as windfall loss. This can correspondingly be recouped by increasing future transmission tariffs. Interest shall be charged for opening balances in relation to windfall profit/loss during the accounting year.

Values for the annual yield, repayments and accumulated windfall profit/loss as well as interest charged and repaid shall be recorded in notes. Over time, the balance of accumulated windfall profit and loss shall approach zero. The purpose of the note is to monitor the development and repayment of windfall profit/loss to the customers.

The records made in notes are automatically transferred to items in the profit and loss account and balance sheet, so that the resulting operating profit/loss equals the yield that the company is allowed to retain.

Line loss
Line loss in transmission and spot price weighted according to the utility’s line loss profile shall be entered in a note. Costs associated with line loss are calculated automatically and transferred to the profit and loss account.

Purchase of transmission services
Purchase of transmission services shall be registered in notes specified according to the segments Electricity sales, Electricity production, Regional networks and Distribution networks. In the case of the segment Electricity sales, this relates to costs associated with deliveries to customers outside the area of the company's licence, where the segment Electricity sales is responsible for settlement with the network owner. Withdrawal and input shall be specified separately. Values are transferred directly to the profit/loss statement.

Sale of transmission services
In the case of the segments Main network, Regional networks and Distribution networks, income from the sale of transmission services shall be registered in notes specified according to network level. The note shall be filled in for the segment Electricity sales if the segment makes transmission agreements on behalf of customers outside the company's licence area.

Values are transferred directly to the profit/loss statement.

Internal transactions and distribution of joint net operating costs
The NVE wishes to control that the network is not charged for more than its share of the costs.

Electricity utilities that have several business segments and practise internal invoicing shall report this in a separate item in the profit and loss account. An account of the pricing principles shall be given in a note.
A description shall also be given of the principles for distribution between the different segments of costs entered under Joint activities. However, the costs shall as far as possible be directly assigned to the segments.

**Subscriptions, metering, settlements and customer support**
Income and expenditure shall be specified according to whether the activities concerned are subject to competition or governed by monopolies.

**Number of man-years, salaries and pension costs**
Salaries, pension costs, number of man-years and capitalization of the company's own labour costs shall be registered in a note, classified according to segment. Values are transferred directly to the profit and loss account.

**Other operating costs**
The item "Other operating costs" shall be specified in a note. The costs shall be classified according to cost category.

**Fixed assets**
In the case of plant associated with transmission services and other fixed assets, information shall be given concerning the acquisition cost, acquisitions and disposals of fixed assets during the current year, government support, subscribers contributions and depreciation. For fixed assets associated with transmission activities, linear depreciation shall be used according to depreciation schedules prepared by the Norwegian Electricity Federation.

Government support received and subscribers contributions to costs shall not be included in the basis for depreciation, and an account shall therefore be given in a separate note of the principles applied in connection with subscribers contributions to costs and government support.

Joint assets, such as means of transport, fixtures, tools, computer equipment, buildings and sites, shall as far as possible be distributed directly between the segments. Distribution of joint assets entered under Joint activities, shall be distributed in a separate item by means of keys. Distribution between activities subject to competition and activities governed by monopolies shall be specified and the distribution principles shall be described in a note.

The size of the opening balance is of major importance for the profits that can be achieved by the electricity utilities, since network capital, defined as the average fixed assets associated with transmission activities with 1 per cent surcharge for net working capital, forms the basis for calculation of operating profit. The Companies Act and the Accounting Act as well as generally accepted accounting principles allow leeway for assessment in relation to cost accounting and capitalization. Companies have therefore followed differing practice where this is concerned, and network owners have been able to apply to the NVE to write their capital asset up or down. A network owner may not increase the capital base without the approval of the NVE. The final date for applications to the NVE for write-up of fixed assets was 1 July 1997.
Transmission and distribution plant
In the case of fixed assets associated with transmission of electricity, in addition to information concerning the value, technical information shall be given. Transmission and distribution plant shall be specified in appendices, classified according to network level. Information shall be given concerning the number of kilometres of overhead, underground and submarine transmission cables.

Electricity sales
Electricity sales shall be registered in notes specified according to the segment for Electricity sales or Electricity production in the case of plants without sales departments, and values are transferred directly to the profit/loss statement.

Wholesale sales shall be classified according to types of contract. Sales to consumers shall be classified according to customer groups.

Purchase of electricity
Purchase of electricity shall be registered in notes classified according to the segments, Electricity sales and Electricity production, and shall be specified according to contract types. Values are transferred directly to the profit/loss statement.

Energy efficiency activities
The regulations pursuant to the Energy Act impose special obligations on licence holders to carry out objective and cross-sectoral guidance concerning efficient use of energy and energy-efficient technology, and the costs incurred by these legally required energy efficiency measures may be covered by means of a surcharge on the transmission tariff. Income and expenditure shall be specified in the appendices with information concerning legally required and other energy efficiency measures.

5. REPORTING AND CONTROL

5.1 Computer-assisted reporting

The NVE has elected to use data processing for collection of financial and technical data from the licence holders. The application for reporting accounting data has been developed within the Windows program Microsoft Access 2.0. The application is available as a run-time version, which can be run without Access being installed. The application is freely distributed to the electricity utilities by the NVE and Statistics Norway. It is sent out each year on five diskettes, and demands a relatively large machine capacity. The application uses two databases, and can also be installed on a multi-user network. The database for registration of data is then installed on a shared server, and can be updated from all of the PCs in the network.

It is possible to connect the application for reporting accounting data to the electricity utility's accounting system by means of a program developed on the initiative of the Norwegian Electricity Federation.
After registering the data, the electricity utility copies it to a diskette to be sent to the NVE. The data is entered, checked and stored in a database. This avoids the need for manual registration of data by the NVE, thereby:

- improving the efficiency of the NVE's internal processing of the data. The database is shared by all responsible staff. All corrections are made in one place, and are immediately available to all members of staff. A central database simplifies access to data in connection with reports and other processing of data.
- improving the efficiency of the electricity utilities' work in connection with collecting and preparing data for the NVE
- enhancing data quality/security
- enabling the calculation of key figures
- enabling the calculation of cost effectiveness
- enabling the preparation of data statistical purposes, time series analyses and other analyses

The database has a security system, limiting access and users' rights.

The report application consists of screen pictures that are accessed by the user from a main menu or from the control picture. In the profit and loss account and balance sheet, values are either registered directly, or via notes attached to the forms. These are opened by clicking on the note number for the item concerned in the form. Some of the notes have submenus. The appendices are in separate forms that can only be opened via the main menu. Values shall not be registered in the control picture. The figures displayed here are derived from the data entered in the profit and loss account, balance sheet, notes and appendices.

The application has a "help" function with guidance on filling in the report forms.

5.2 Control of accounts

The NVE's regulation and control of the network companies is directly based on network companies' reporting of accounting data, and is therefore dependent on satisfactory and reliable reporting.

The use of a computer system for the reporting simplifies the work of the NVE in ensuring that accounts are kept according to the current guidelines. Each year, two hundred and sixty accounts are checked. Control of accounts focuses on reported income, costs and investments in monopoly activities. However, as certain costs are common to all activities (e.g. sales, production and transmission), attention must also be given to activities that are subject to competition.

Even though reports are received from many companies and involve large amounts of data, relatively small resources are needed for the control itself. The electricity utilities are required to use the PC application that is sent to them for making the report, and all accounts submitted therefore have the same structure. Entry of the reports in a database enables the viewing of data for a single utility or comparison of data derived from two or more utilities. In this way, key figures and validity tests generated in the
efficiency model are used in the control of the reports. In the event of deviations, errors or deficiencies, the electricity utility is requested to provide an explanation.

To facilitate control, a control view is generated as part of the report. Selected data from the profit and loss account and balance sheet, appendices and notes are transferred directly to this view. The view functions as a control of the internal consistency between the reported data.

In the control view, operating profit/loss and balance sheet values on 1 January and 31 December are displayed for all segments. In the case of network activities, figures are also displayed for network capital, defined as average fixed assets in network activities with 1 per cent surcharge for net working capital, and rate of return. Technical figures such as the length of network in kilometres, electricity supplied and number of subscribers, are given for the segments Regional networks and Distribution networks. A control is also made to ensure that the supply of electricity available is sufficient to cover sales. The control view thereby simplifies control of the main elements of the report.

A control is also made to ensure that the most important notes have been filled in correctly, and that they conform with the official accounts.

If, when reviewing the accounts, the NVE discovers that the NVE’s guidelines have not been followed, individual decisions are often made in relation to licence holders. The individual decision directly affects the licence holder’s tariffs. Appeals against such decisions can be addressed to the Ministry of Petroleum and Energy.

5.3 The role of the auditor

The reports are checked by the company auditor, who has to sign a separate document stating that specified and agreed control procedures have been carried out. This check shall be carried out in accordance with the proposed standards of the Norwegian Institute of State-Authorized Public Accountants.

The main points of the checks involve controlling that the accounts reporting to the NVE complies with the revised annual accounts, and that there is a correct distribution between activities subject to competition and monopoly activities.

Experience shows that this supervision by the company’s auditor is not a guarantee that the accounts have been drawn up in accordance with the specifications laid down by the NVE. In some cases, this is because the auditor has a poor knowledge of the NVE’s guidelines and of the importance of following these guidelines. The quality of reporting has improved markedly during the regulation period.
5.4 Requirements regarding separate accounting information on monopoly activities in the annual report

In accordance with the regulations pursuant to the Energy Act, the licence holder is required to provide separate accounting information in its annual accounts concerning the segments within monopoly activities. This means that separate profit and loss accounts and balance sheets must be given for the segments Main network, Regional networks and Distribution networks. In the case of profit and loss accounts, the requirement is limited to showing income and expenditure that results in operating profit/loss. The balance sheet must show the capital base for calculation of earnings.

The purpose of this segment information is to give the public an insight into where in the company results are generated, and to give a better understanding of the distinction between network activities and other activities. The activities subject to competition involve an element of risk, whereas monopoly activities are almost risk-free. The fact that network activities also involve an element of risk is mainly brought about by the possibility of changes in the regime of regulation. Reports for the company as a whole will not distinguish between profit/loss deriving from activities subject to competition and profit/loss deriving from network operations.

The segment information also facilitates the NVE’s control that the financial and technical reporting to the NVE complies with the network company’s official annual accounts.

5.5 Possibilities for penal reactions in the case of failure to report or unsatisfactory reporting

If the report is not sent in, or fails to satisfy the quality requirements of the Energy Act and the guidelines laid down by the NVE, the NVE is empowered, pursuant to the Energy Act, to impose a coercive fine.

6. THE USE OF FINANCIAL AND TECHNICAL DATA IN NVE’S REGULATION

Data collected by means of financial and technical reporting forms the basis for the NVE’s regulation. The database also contains figures that are useful in connection with disputes over transmission tariffs. The information that is collected supplies essential background data for assessing such cases.

The NVE began collecting data from network companies, converters and producers in 1993. In the NVE’s experience, it is important to begin collecting data at an early stage of the regulation process, so that follow-up and improvement of the regulation can rapidly be set in motion.
6.1 The establishment of income frameworks

With effect from 1 January 1997, the NVE has introduced a regulation of network activities based on income frameworks and financial incentives. The regulation model handles each of the two hundred network owners individually. The income frameworks are adapted to the actual level of costs experienced by the electricity utility, and are based on reported and audited accounting figures for 1994 and 1995. At the same time as the network company's individual operating conditions are taken into consideration through the use of genuine cost figures, the frameworks are established in a relatively simple way by retrieving specific items and thereby equivalent figures from the database.

The frameworks are defined in such a way that from 1997 the electricity utilities must make annual reductions in their costs in accordance with a general percentage rate decided by the NVE. From 1998, individual efficiency requirements based on the NVE's efficiency measurements derived from figures from 1994 and 1995 will be included in the framework.

The reports to the NVE of accounting data for 1994 and 1995 have been of fundamental importance for the implementation of this new regulation model, with regard to both efficiency requirements and the establishment of permitted income. Since both the efficiency requirements and the permitted income are calculated on the basis of figures reported by the network owners themselves, and not on the basis of estimates made by the NVE, it is difficult for the network owners to assert that the basis for calculation is wrong.

6.2 Efficiency measurements

Efficiency measurements are important both for the NVE's regulation of monopolies and for the work of the network owners themselves in developing a better and more efficient network function. The data envelopment method has proved to be very suitable for measuring the efficiency of the electricity utilities. The method consists firstly of identifying which electricity utilities use least resources to solve their tasks, and secondly of comparing the results of each electricity utility with those achieved by the utilities with the best results. The data envelopment method can be used to measure both the technical efficiency that gives an indication of the amount of inputs used in relation to the best and the cost-efficiency that also reflects inefficient composition of input factors.

The model uses accounting data, information on the number of subscriptions supplied, the amount of electric power distributed, etc. All of the electricity utilities in the country that distribute electricity through regional and distribution networks are analysed on the basis of the data presented in the financial and technical reports. The analysis provides inefficient electricity utilities with information on the size of the economies that they can make, while maintaining their current range of transmission services.

The analysis program is directly associated with the accounts database.
6.3 Calculation of key figures

The technical and financial reports supply the NVE with large amounts of information about all companies involved in the transmission of electricity in Norway. On the basis of this information, the NVE prepares a set of key figures each year for each of the network companies' transmission activities. We have also developed a computer program for benchmarking based on these key figures. It is possible to make comparisons for each individual year, and also to examine the development over time (time series analyses).

The NVE will place increasing demands on efficiency improvements by the electricity utilities. Companies that make no attempt to reduce costs in network activities will rapidly experience that their profits are reduced to a minimum, and that their room for manoeuvre is thereby also reduced. By preparing key figures for the industry and by publishing these figures and the data on which they are based, we will enable the electricity utilities to assess their performance. The key figures and the benchmarking program provide the electricity utilities with greater insight into their own level of costs, the factors that generate costs and the possibilities for making improvements. Comparisons with other network companies initiate a process whereby the electricity utilities can learn from each other and find better ways of solving their tasks. This will reveal the potential for improvements more rapidly than could be achieved by means of internal improvement studies. We wish to call attention to the importance of the electricity utilities' identifying companies with a comparable size of supply area, amount of supplied electricity and number of subscribers when selecting companies for benchmarking purposes.
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