Project: Development of a model for implementation of ESCO EPC contracts in Polish hospitals

DRAFT OF POLICY DOCUMENT

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I. Introduction

There are over 800 hospitals in Poland with an estimated energy savings potential of 20-40% among them. While in many countries, the use of the Energy Services Company (ESCO) model has proven successful for implementing energy efficiency measures in hospitals, this model has not yet been utilized in Poland or other Central and Eastern European (CEE) countries with wide success. This is primarily due to the slow pace of implementation of reforms in the health sector in these countries, leaving local ESCOs and banks alike to be unwilling to take hospital credit risk.

This project seeks to create a financial model to address the barriers of financing energy efficiency developments in Polish and other CEE countries' hospitals. This includes the preparation and negotiation of policy changes necessary to allow the Polish National Health Fund (NFZ) or another appropriate entity to guarantee payments to hospitals in an amount sufficient to cover the annual payments to ESCOs under Energy Performance (EPC) contracts. The policy goal of the project is to initiate change in the hospital services reimbursement system at the NFZ by demonstrating to the NFZ and the Ministry of Health how such a system would facilitate the financing of hospital energy efficiency improvements. The project stems from a Polish energy efficiency project funded by the World Bank's Energy Sector Management Assistance Project (ESMAP). If the NFZ chooses not to make the required policy changes, the project team will work with the State Economic Development Bank of Poland (BGK) to serve as a guarantor for the pilot project in order to demonstrate the level of credit support necessary to make the ESCO model viable for the hospital sector. The project will use the development of the pilot demonstration

We envision that if this model proves successful in Poland, other CEE countries could benefit from the model, since many countries operate with a similar system as Poland for funding buildings, maintenance, and related projects in the healthcare sector. This project is also specifically targeted toward addressing several critical Millennium Development Goals due to its emphasis on the healthcare sector. Hospitals in the region are in dire conditions because of the lack of financing available for improving facilities. Because the project improves the economics of renovating hospitals, it will have an impact on all health-related indicators including combating diseases, improving maternal health, and reducing child mortality. Because it is promoting energy efficiency, the project will also contribute to environmental sustainability.

The model will be prepared based on the case of a small hospital in Piaseczno, a suburb of Warsaw. The hospital is owned by the municipality and operated by the Polish Ministry of Administration and Internal Affairs.

The main objectives of the project are:

1. Prepare and negotiate the policy changes necessary to allow the NFZ or another appropriate entity to guarantee payments to hospitals sufficient to cover the annual payments to ESCOs under EPC contracts, in other words up to the amount of projected energy savings. This represents a miniscule portion of total reimbursement payments to be made by the NFZ to a hospital therefore it is only a legal mechanism that is needed to segment these funds for ESCO EPC payments.
2. Prepare one pilot energy efficiency project at the hospital in Piaseczno for tendering to ESCOs as test case for the national-level policy change.

3. As European ESCOs today are increasingly unwilling to maintain EPC financing on their balance sheets, we will negotiate and arrange for a local bank to buy the long-term receivables under a forfeiting arrangement.
4. Disseminate the policy guidelines, ESCO tender and forfaiting arrangement documents to other countries in the CEE region with similar health care financing schemes

This draft policy document is designed to be a tool for providing a dynamic structure for presenting the situation in a project environment as well as documenting the progress in achieving the project's main goals. This includes a presentation of the current general situation in the Polish health sector (overview); areas that have to be addressed while creating the pilot project and model; findings from our first meetings; and research that has been performed during this preparatory stage of the project.

This project is being managed by the National Energy Conservation Agency of Poland (NAPE) in partnership with HPA Consulting Sp zo.o.; the expected beneficiaries are the hospital, the municipality that owns the hospital, and the guarantor

II. Poland's Health Sector Overview (General)

In order to understand the challenges related to financing energy efficiency and ESCO projects in hospitals in Poland, it is necessary to first consider the evolution of Poland's healthcare system since 1989 and the current policy deliberations over further re-organization and reform. It is against this backdrop that any policy solutions to facilitate ESCO financing must be analyzed, proposed, and determined.

General situation

In the 16 years since the fall of communism, Poland's healthcare system has evolved from a primarily publicly-funded central system (although some outpatient and dental care was private) to a Bismarck social health insurance model, although the process has been far from smooth. From 1989 to 1999 reforms focused on the institution of compulsory health insurance. The delivery system was separated from the financing system and then incrementally decentralized. Local health care management units (ZOZs) integrated hospitals, outpatient clinics, specialized and primary care units. In 1999, 16 regional sickness funds and one military-police sickness fund was established and the legal basis was established for moving towards hospital autonomy. Three years later, however, the government recognized two flaws in the reforms: (1) benefits and management styles varied dramatically across regions, exacerbating underlying inequities throughout Poland; and (2) hospitals, despite their theoretical autonomy, continued to build up huge debts which were periodically forgiven by the government.

In an effort to increase the uniformity of services offered and to improve efficiency, a series of reforms were passed in 2003 that re-centralized the insurance system. A single National Health Fund (NHF) unified the 17 sickness funds. The 16 regional offices were converted into administrative agencies with no real decision-making power. These reforms, however, have been met with similar challenges of financial sustainability. In September 2005, the newly elected "Law and Justice" party called for a recentralization of the system and a return to a Ministry of Health (MOH) financed and centrally planned system. Upon taking office, a Minister of Health, Zbigniew Religa, was appointed from other than the ruling party. Mr.

Religa opposed the 2003 recentralization reforms and proposed instead greater independence and competition among the 17 sickness funds. At present, he appears to have charted a middle road that enjoys considerable support among public health experts in Poland, if not among the public. A major problem is that while on paper people are covered for all services, in reality many services are simply unavailable. As a result, Minister Religa announced that his goals for the health system are to:

- develop a guaranteed benefit package;
- allow private voluntary health insurance to play a stronger role covering services outside the package once the guaranteed benefit package program is completed; and
- transform the public insurer (the National Health Fund) into several autonomous funds.

Minister Religa has noted the complexity of these reforms, stating that appropriately paced change would take seven years to complete the process. Both the Prime Minister and the President of the National Health Fund apparently agree on the general direction of this proposed transformation. Implementing a basket of guaranteed, universally offered services is expected to take two years.

At the core of the Polish health care dilemma is the issue of financial sustainability of the system. A major issue that has remained unresolved throughout all previous reforms is the fundamental inadequacy of healthcare funding. At first glance, Poles spend exactly the percentage of GDP on healthcare that is predicted by their income levels[1]. However, this perspective is misleading due to several factors. First, per capita public spending on healthcare is low by international standards. Second, Poland's income level is low compared to European standards and because 45% of health spending is purchased at international prices, it is necessary for Poland to actually spend a higher percentage of GDP than the norm in order to provide high quality care. An estimated 25% of public spending on healthcare is dedicated to pharmaceuticals. Third, salaries need to be increased if physicians and nurses are to remain in Poland. Particularly significant is a report that 13% of all anesthesiologists in Poland have applied to emigrate to Western Europe for higher salaries[2].

Hospital Management

Hospitals in Poland	Year		
	2004	2003	2002
General hospitals	790	732	739
public (state and self-government owned)	643	660	678
non-public (private owned: churches, trade unions, private entities etc.)	147	72	61
Ministry of Defense (state owned)	24	24	24
Ministry of Administration and Internal Affairs (state -owned)	29	29	29
in Total	843	785	792

Source: Central Statistical Office GUS

Hospitals have in legal terms theoretically become autonomous, according to the Act on social care facilities from 30.07.1991, with the purchasing and service functions of the systems clearly differentiated and the level of autonomy in making decision clearly specified.

[1] Johns Hopkins International Health Care Modernization in Central and Eastern Europe
[2] Gazeta Wyborcza from 19.06.2006 Praca

However, most hospitals are incurring debt and they seem to be able to do it with impunity. Periodically the government forgives the debt, usually when the level of debt reaches the point that the hospitals are unable to pay salaries and have no money for medicines. Despite or perhaps because of the periodic debt-payoffs by the government, debts continue to accrue. With just one third of hospitals financially sustainable today, the causes of the chronic deficit appear to be multiple and systemic. The sources of this problem may be assigned in great extent to the following factors:

- A social welfare culture that has endured despite legal reforms. Managers and staff assume (unfortunately rightly until now) that the Ministry of Health and local politicians will bail them out. Debts have in fact been wiped out at least three times by the government in the last decade.
- A patient culture that is accustomed to high levels of medical consumption, including prescription drugs, but funding is not adequate to support this level of service.
- Wide variations in supply of hospitals across regions, leaving many urban hospitals with low occupancy rates. Warsaw and Silesia have significantly more beds than are needed.[3]
- There is political pressure for local politicians to keep unnecessary hospitals open because these hospitals are a source of employment. Many regions of Poland have unemployment rate between 15-25%.
- Parliament mandated a salary increase of 203 Polish Zlotys for health professionals in 2000, but no additional funding was provided for this increase. In order to introduce this increase, it was necessary to finance low interest rate credits for hospitals.
- One failed reform idea was to create of a core network of hospitals that would shut down unnecessary facilities. Because an anticipated criterion for survival was the level of technology available, hospital managers hurried to purchase modern equipment, driving up debts irrespective of need.

The current Minister of Health maintains the necessity to create this core hospital network and plans to close down or transform into long term health care units several dozen hospitals. The core network is intended to also include private hospitals. Many factors reveal a lack of accountability at the hospital management level, and there is a growing consensus that further financial responsibility can only be achieved by moving closer to privatization of hospitals. There are a number of different options under discussion to promote additional autonomy and responsibility. These include: i) Public-private partnerships, such as those found in Slovakia where the State holds 51% of shares. (There are already approximately 70 hospitals in Poland in which the majority shareholders are companies established by local authorities and private investors); ii) Corporatization, a model in which there is full privatization but with some government regulation of the management retained, e.g., civil service or procurement rules; and, iii) Complete autonomy from the State, either as a for-profit or a non- profit corporation. It is estimated that approximately 100 (see Table above) hospitals should be eliminated, especially in Warsaw and Silesia.

Payment Systems

There are multiple payers in the Polish healthcare system, including the National Health Fund (NFZ), Ministry of Health, Ministry of National Defense, Ministry of the Interior and Administration, the Ministry of Justice as well as local governments. Hospitals are reimbursed

[3] Johns Hopkins International Health Care Modernization in Central and Eastern Europe

for services based on a per-admission fee and a point system for 1300 procedures. This creates the financial incentive for them to provide more services in the most efficient manner possible. The number of admissions that are reimbursable is stipulated in each contract and can vary according to regional supply of services and demand. Through a separate state budget, the MOH covers certain specialized services and equipment. Hospitals that treat more patients and more complicated patients would receive greater funding. Presently this mechanism operates mainly in theory and it often happens that in some more difficult cases serving more patients actually means increasing financial losses. To achieve improvement in this area there is a need for urgent actions focused on:

- establishing capacity for health technology assessment (HTA)
- evaluating the relative cost effectiveness
- assessing each emerging health technology

According to a paper entitled "Poland Health Sector Modernization Program", presented by Jaroslaw Pinkas, Undersecretary of State Ministry of Health, this could happen as early as in 2008. Until that time, there remains a substantial risk that hospitals will not be reimbursed fully for some more complex services.

Improvement of financial sustainability is integrally connected with the introduction of complex market mechanisms that more objectively measure such parameters as quality of treatment. Future reform mechanisms will have to create revenue supporting mechanisms that will reflect quality of services provided at least from marketing point of view.

Quality measurement remains at an incipient stage in Poland – one possible explanation is the underlying issue of financial sustainability. There is growing recognition that the quality could be measured and perhaps even linked to payment. Increasingly, hospitals have been interested in attaining the European ISO standards as a way to demonstrate parity with other EU health services. The problem is that ISO focuses exclusively on structural quality and does not examine process or outcome measures. A Polish news magazine has also taken on the task of a public ranking of hospitals.

Generally, Poland's current health reform objectives can be summarized as follows:

- Elimination of huge operational losses year after year in about 70 percent of all hospitals funded under the public health insurance system
- Reduction of large number of public hospitals and beds
- Improve medium-term fiscal sustainability of the health sector
- Development of bed-use master-plans including possibility of hospital consolidation or closure
- Development a minimal network of public hospitals funded under the public health insurance system
- Development of human resource planning
- Establish rules for access to reimbursement list which is presently not EU compliant
- Prepare effective Health Technology Assessment (HTA) for drugs
- Implement transparent HTA criteria for new drugs
- Mobilize efficiency reserves in drug pricing
- Review health policy separately from industrial policy objectives

- Measure and influence provider behavior through an adequate monitoring, training and incentive system
- Build alliance with patients for rational drug use and against over-prescribing
- Increase flow of funds into the health sector
- Reduce reliance on informal payments
- Improve a partly ineffective and inefficient services package
- Address the mismatch between supply and demand
- Provide better access to cost effective quality health services
- Implementing explicit and transparent decision-making
- Establishing capacity for health technology assessment (HTA)
- Establishing mechanisms enabling the evaluation of the relative cost effectiveness of health sector and medical procedures.

The Ministry of Health expects that all of the conceptual and legal framework for health sector reform should be ready by December 31, 2008, however the implementation stage may take an additional 3-4 years.

III. Financing Energy Efficiency Developments in Hospitals

Financing of ESCO projects in Hospitals: Issues

The overarching poor condition of hospital buildings and inefficient energy installations in hospitals in Poland and other CEE countries make these countries an ideal market for the implementation of energy efficiency programs. Unfortunately ESCO energy efficiency programs have not been considered on a broad scale. This is because the continuous reform in the health sector, and the lack of attention paid to infrastructure issues and related risks, created a situation whereby hospitals are not recognized as trustworthy creditors by financial institutions.

Presently the introduction of any investment support programs designed to improve hospital infrastructure would face a variety of obstacles including:

- Lack of unified ownership structure. Hospitals in Poland are formally owned by local governments, medical universities, a range of state government ministries and the National Railway. There are only few private hospitals.
- There is still no political consensus for implementation of the universal restructuring of hospitals called for by the current government. As a result, there are no clear laws and regulations which may serve as a formal basis to enable more rational business-oriented functioning.
- Proposed healthcare sector restructuring policies differ between regions, voivodships, and even between the various counties of the same voivodship.
- Standards established by NFZ for reimbursement of hospital services usually underestimate the real costs of some services. Hospitals therefore are often experiencing problems with full cost reimbursement.
- Hospitals have the public "obligation to serve" and must therefore provide service for everybody that needs healthcare. It often happens then that hospitals provide services for people that are uninsured. Theoretically in these cases the cost of such services will

be covered by the patient, but these receivables are usually difficult to collect and are not finally reimbursed.

- Polish hospitals have a high level of indebtedness at about 70%. In the Silesia Region of Poland, hospital debt was structured as follows:
  - 42% payables for public legal debts
  - 14% payables for medicines and medical materials
  - 7% payables to employees
- There is a difference in risk connected with financing programs between large hospitals (>1000 beds) and smaller hospitals.

Demand for investments in Energy Efficiency programs in the Hospital Sector

As described above, hospitals in Poland have faced many financial challenges over the last sixteen years in all aspects of healthcare provision. This has left infrastructure modernization as one of the lowest priorities, leaving a crumbling infrastructure in place that is increasingly expensive to maintain or repair.

Due to difficulties in financing for hospitals in general, and then specifically with the investment programs connected with modernizing hospitals, during the most recent 16 years, there has been almost no consistently organized energy efficiency program for the sector. Some hospitals have tried independently to organize grants and financing for a limited scope of modernizations likesuch as replacing windows in some hospital wards. It is estimated that for proper future functioning, hospitals in Poland hospitals will need to spend 8-11% of revenues for investments into hospital infrastructure.

Since there is no official inventory made for hospital buildings in Poland, the only source of assessment for energy efficient retrofitting measures (EERM) can be energy audits elaborated by hospitals for reasons of fund raising. Over the past five years, NAPE has elaborated energy audits for 25 hospitals with over 100 buildings.

Hospitals audited by NAPE	
General hospitals	22
public (state and self-government owned)	21
non-public (private owned: churches, trade unions, private entities etc.)	1
Ministry of Defense (state -owned)	1
Ministry of Administration and Internal Affairs (state -owned)	2
in Total	25

The analysis of the buildings showed that most of them are using district heat for heating and hot water preparation and that individual heat sources, where they exist, have been modernized already. The remaining part of EERM are related to internal heating and hot water preparation (including solar installation), insulation of external walls and roofs, replacement of windows, and replacement of entrance doors. These measures bring after their completion an average 50% savings of energy consumption. The simple pay back time amounts to 16 years in average. The higher modernization cost, the longer pay back time.

Main indicators of energy saving measures in audited hospitals		
Age of buildings		
-1950	20	%
1951-1960	10	%
1961-1970	30	%
1971-1980	20	%
1990-	20	%
Cost of measures per m^2 of usable area in average	50 €	
SPBT in average	16	Years
Energy savings	50	%

The energy audits in Poland are prepared according to the standardized methodology issued in 1999 by the Ministry of Construction. The savings are calculated based on a comparison of physical heat demand of buildings before and after the refurbishment of buildings. The monitoring of a pool of energy audits performed in 2005 by NAPE on behalf of the Ministry of Construction showed that for public buildings, the measured results of energy savings are almost the same as those calculated in energy audits.

Applicability of Common Energy Efficiency Project Finance Structures:

The most popular financing models applicable in financing energy efficiency programs, all of which may include the participation of an ESCO provider, are:

1. Loan or lease to energy end-user
a. Vendor finance programs
b. Loan/lease combined with guaranteed savings

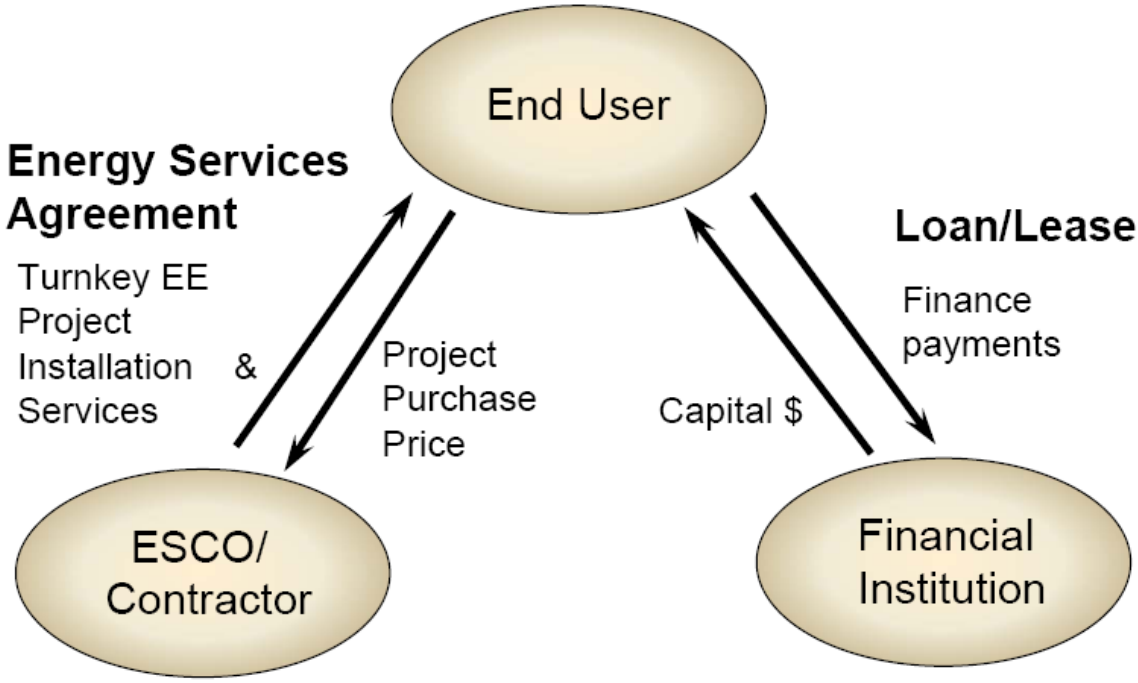
2. "ESCO structure"
a. ESCO is borrower of debt financing
b. Many variations of ESCO/End-user agreements

3. True “Project Finance”
a. Project revenues, assets & contracts secure debt
b. Borrower is a new special purpose corporation

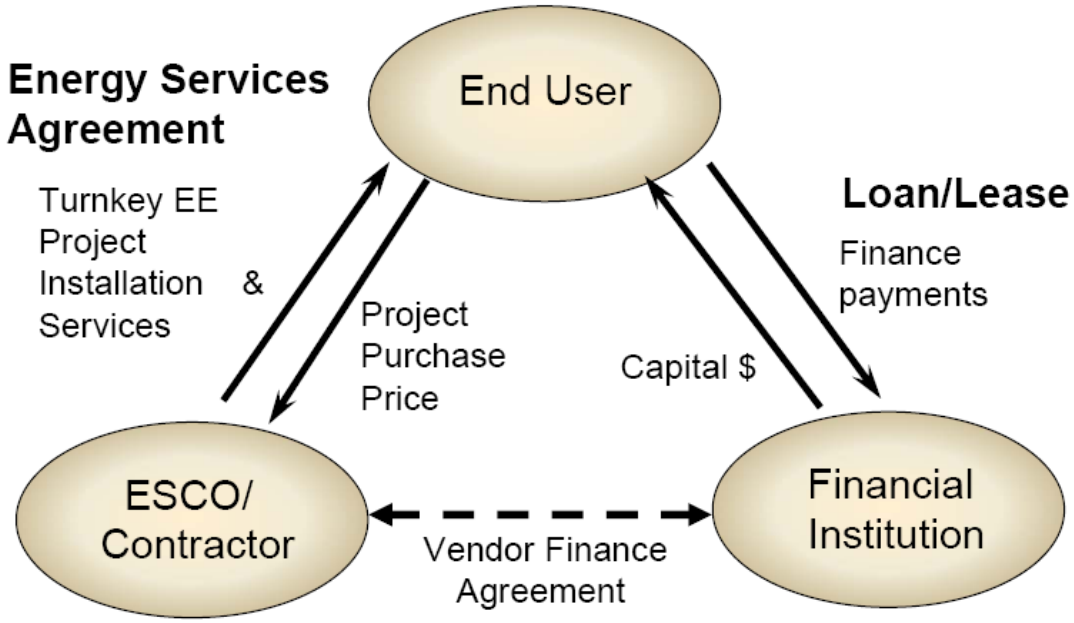
Due to the constraints discussed above for Polish hospitals, option 1 above, a loan or lease to energy end user model, seems to be the most appropriate for the implementation of energy efficiency programs in the hospitals. The application of the "ESCO structure" will likely be possible at a later stage, when there are more advanced reforms in the Polish healthcare sector, since they require a more stable situation. The application of a typical project finance model is rather unlikely. However, we will examine the willingness to apply each of these structures at the planned meeting we will hold with potential energy efficiency projects participants.

Within the loan or lease to energy end-user model, the application and feasibility of the two model variants illustrated on the chart below will be analyzed.

Model 1.



Model 2.



Risk Analysis:

Prior to assessing the implementation of each energy efficiency (EE) financing model, an appropriate risk analysis is required. The final policy document shall address all issues connected with EE project risks and accordingly reflected in policies of all participating parties. This risk analysis shall cover at least following areas:

- Identification & evaluation of all risks and development of a mitigation plan and plan of risk allocation among capable parties.
- Who is the Borrower? Who is the Purchaser?
- What is the structure of the Purchaser's payment obligation? Is it fixed, pre-established, variable, or performance-based? If performance-based, is it based on energy savings or sales? What is the method for calculating payments? (Energy savings, energy sales measurement, and verification procedures.)
- End-User/Payer Credit/Payment Risks ability & willingness to pay, regardless of formula

The proposed final policy shall address economic risk factors typical for hospitals in financing any energy efficiency program for hospitals including the following factors:

- level of financial liquidity
- ownership structure
- profitability
- productivity utilization of assets
- amount of patients
- average hospitalization days
- level of costs connected with patients (food, laundry, energy etc.)
- effectiveness of utilizations of surgery facilities
- revenue for 1 bed
- level of indebtedness
- specialization of the hospital
- value of expected energy savings

IV. Description of Piaseczno Case Study

For the case study for this project, we selected the hospital in Piaseczno, which is planning to modernize its facilities. The hospital in Piaseczno is formally owned by the Ministry of Internal Affairs and is a subsidiary of the Hospital of Internal Affairs in Warsaw, situated at Woloska Street, but the building and parcel belong to the self-government in Piaseczno and are rented to the Hospital Woloska for 10 years. The Ministry of Internal Affairs (MSWiA) owns and operates 292 hospitals with a total number of 56,574,112 beds. The Hospital at Woloska Street is in a relatively good financial situationstanding and holds a fairly low level of debt. More than 80% of the hospital's revenues come from reimbursements for services rendered from the National Health Fund. The hospital may also receive some support from the MSWiA.

There are no particular differences between the operations of the MSWiA-owned hospitals and hospitals with other ownership. The problems that this hospital faces are typical for the whole sector, making it a solid case study.

Financing specifically for hospital modernization has until now been financed by MSWiA, through the hospitals' own funds and with the support of commercial debts. Debt may be incurred by the hospitals but the procedure requires consent of the owner. Additionally the investment in new heat sources may be eligible for the support from WFOSiGW or NFOSiGW (National and Voivodship Environment Fund). In realization of all investment programs, all hospitals are obliged to follow general obligatory procurement procedures and law.

The scope of Piaseczno Hospital Modernization:

Parameters of buildings

- Year of construction: 1980
- Construction type: standard one floor brick building, 2 blocks (Main building, daily operation building)
- Heating surface 900/327,0 m^2
- Volume of heated building 2879/1047 m^3
- Heat source – own natural gas fired boiler constructed in2001 – fully automated

Scope and cost of identified works:

Daily operation of building: insulation of walls, roof, replacement of windows and entrance doors, and replacement of internal heating installation.

Main building and daily operation building: installation of water saving equipment

1.	Estimated cost of work	32,5 T€
2.	Calculated heat and water savings	4,75 T€/y
3.	SPBT	6,9 years
4.	Calculated heat demand reduction	430,5 GJ (34%)
5.	Calculated natural gas consumption reduction	12 735 m^3
6.	Calculated water consumption savings	330 m^3/y

[**Note**: May and June this year represented a particularly difficult situation in the healthcare sector in Poland with general strikes and other related events. This was also the case at Piaseczno, which also experienced a total replacement of the hospital's management. For this reason, we have not been able to collect all necessary information to complete the description of the hospital's financial situation. TheseThis data will be completed at later stages of this project.]

V. Preparing an ESCO Policy in the Context of Health Sector Reform

Entering the Policy Dialogue

Since the MOH has just begun to undertake a new round of health sector reform, the project is well timed to contribute to the dialogue and propose policy solutions to facilitate financing of energy efficiency in hospitals. It is also the right moment to suggest changes in relevant procedures and statutes that would allow health system payers such as the NFZ or another

appropriate entity to provide guarantees sufficient to cover the annual payments to ESCOs under EPC contracts. If such guarantees are tied directly to the achievement of actual energy savings, there is strong rationale for this approach. Since the process of reform envisioned by the MOH is a long one, it will be important for the Project to propose solutions that may be applied both in the future and during the current transition period.

Main financial instruments and institutions that may be utilized in construction of a policy and potential areas for policy change.

The following represent some of the primary financial institutions and instruments we will analyze for our policy-related recommendations, including a description of their services:

- BISE: Bank BISE manages two financial facilities that may find application in constructing Energy Efficiency financing program for hospitals. One is a credit line for investment in ecology, education, health protection and infrastructure of rural areas. This credit line is operated in cooperation with the Development Bank European Council and from that source, may finance projects in: building and modernization of medical service infrastructure, houses of medical care etc. These credit lines can be utilized in cases where hospitals are owned by local governments. The credit can be taken for a 15 year limit and may equal up to 50% of the total investment value.
- GEF-BGK Guarantee Fund: We will consider the utilisation of this financial tool in the hospital sector.
- BGK (Bank Gospodarstwa Krajowego)Thermo-Modernization Program: The possibility of utilizing this tool will be also explored in our policy document.
- BOS (Bank Ochrony Środowiska): This bank is usually active in financing environmental protection, renewable and energy efficiency projects. The opportunity of creating a special credit line for the hospital sector will be explored.
- ESCO companies: We will consider the requirements of ESCO companies to materialize the implementation of the EE program. We will contact Siemens Building Technologies, in particular, which is presently the most active in implementation of EE programs and is also experimenting in implementing limited scope modernization in hospitals.
- Grants from NFOS and WFOS: These grants can presently be obtained exclusively for modernization of the source of energy. We will examine if there is any chance to change the policy of these institution in these regard.
- MOH participation in modernization costs: The Ministry of Health participates in investment costs connected with some modernizations in Hospitals. We will examine the possibility of creating a guarantee mechanism or creating a ministerial energy modernization fund.
- Local Government Participation: We will consider the local government's participation in modernization costs on the case-by-case basis, including supporting financial mechanisms that are already functioning.
- Prolonged payment for services delivered.
- Escrow account for fraction of revenues from NFZ: The statistics provided for hospitals in the Silesia region show that 90% of hospital revenue comes from the sale of services, which are in turn 80% financed by NFZ. For the purpose of this program, we will assume this proportion as representative for the entire healthcare sector in Poland. NFZ is simply reimbursing the costs of services provided by hospitals. Presently there is no mechanism allowing the security of a fraction of these revenues as collateral supporting credits by NFZ. We will examine the possibility of a policy

change which allows the NFZ to set aside an appropriate fraction of these revenues to be secured by, for example, a special escrow account to allow debt repayment, which would in turn be used for infrastructure upgrades such as energy efficiency measures. The present average cost structure in hospitals (53% cost connected with personnel; 26% energy and materials; and 13% services contracted outside) shows that this mechanism of financing energy efficiency programs might be sufficient and feasible.