



**Bucharest
Municipality**



**Primaria Municipiului
Bucuresti**

Contract 4144 / 31.12.07

Contract 4144 / 31.12.07

**Energy Strategy for Bucharest
Municipality**

**Strategia Energetica a
Municipiului Bucuresti**

Phase III: Strategy Report

Etapa a III-a: Strategia

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Observation from RADET

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Grontmij | Carl Bro

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1 INTRODUCTION

The Consultant has submitted the Draft Final Report for the Energy Strategy. The Strategy was presented for the Technical Committee on 20.08.2009.

RADET has submitted a number of observations the meeting respectively on 09th of October 2009. This Technical Note repeats the observations and provides the answers from the Consultant.

RADET has sent a replay to the technical note formulated by the Consultant on 26th of October 2009.

The Consultant has replayed to RADET as bellow:

1 INTRODUCERE

Consultantul a transmis varianta initiala a Raportului Final pentru Strategia Energetica. Strategia a fost prezentata Comitetului Energetic Municipal in data de 20.08.2009.

RADET a formulat o serie de observatii si a transmis note scrise ulterior intalnirii, in data de 09.10.2009. Consultantul a raspuns la notele scrise care s-au regasit si in observatiile formulate.

RADET a revenit, in data de 26.10.2009 cu un raspuns la nota consultantului:

Consultantul a raspuns dupa cum urmeaza:

2 OBSERVATIONS AND ANSWERS

2.1 RADET

We have the following observations on the documentation prepared by Grontmij | Carl Bro as result of the services contract signed in 2007 with Bucharest Municipality.

Observation 2.1.1:

The above mentioned contract was concluded without previous acceptance of RADET.

Answer 2.1.1:

It was the solo decision of Bucharest Municipality.

Observation 2.1.2:

All RADET investments implemented or during implementation under City Council coordination, based on the feasibility study prepared by Danish Power Consult named "Strategy for public services for heating supply 1999-2015" and financial approval of City Council, apart being under supervision of Danish Consultant team (in 1994, under PHARE programme was allocated 1 million ECU for the elaboration of "Study for rehabilitation of district heating in Bucharest")

All projects to be implemented in order to achieve the goals of this strategy was estimated to approx 934 million USD(1999) as follows:

- A. Modernisation of primary network, secondary network and new components – valves – compensators
- B. Modernisation of thermal substations
 - Control system
 - Heat exchangers
 - Electrical installations and pumps
- C. New transmission networks
- D. Metering
- E. Dispatch system
- F. Modernisation of htw network
- G. Connection to local HoB

The goal of this strategy was to obtain at least 50% reducing of heat losses, increasing the comfort, safety supply, safety operation, connection of new heating sources and new consumers.

Answer 2.1.2:

The amount of 934 MUSD/ECU is correct. The

2 OBSERVATII SI RASPUNSURI

2.1 RADET

Avand in vedere materialele prezentate – in baza contractului in anul 2007 intre PMB si firma internationala de consultanta Grontmij | Carl Bro, facem cunoscut urmatoarele:

Observatia 2.1.1

Contractul a fost incheiat fara consultarea RADET.

Raspuns 2.1.1

A fost decizia unilaterala a Primariei Municipiului Bucuresti.

Observatia 2.1.2:

Toate investitiile RADET au fost si sunt desfasurate sub coordonarea CGMB, pe baza studiului de reabilitare a sistemului de termoficare intocmit de Danish Power Consult, a "Strategiei Serviciilor de alimentare cu energie termica prin sistemul de termoficare 1999-2015" si a angajamentelor financiare aprobate de CGMB, unele avizate – coordonate si de consultanti danezi (in anul 1994, prin programul PHARE s-a alocat 1 milion ECU pe baza caruia Danish Power a intocmit "Studiul de Reabilitare a Municipiului Bucuresti")

Investitiile totale necesare implementarii acestei strategii au fost estimate la cca 934 mil USD(1999) reprezentand:

- A. Modernizare retele primare, secundare si componente noi – vane – compensatori
- B. Modernizare puncte termice:
 - Automatizare
 - Schimbatoare caldura
 - Instalatii electrice si pompare
- C. Retele noi de transport
- D. Contorizare
- E. Dispecerizare sistem
- F. Modernizare retele acm
- G. Racordare centrale cartier

Rezultatul aplicarii acestei strategii ar fi permis reducerea cu cel putin 50% a pierderilor de energie termica, cresterea confortului, a sigurantei in exploatare, racordarea de noi surse de caldura si noi consumatori

Raspuns 2.1.2:

Suma de 934 milioane USD/ECU este corecta. Cea

significant higher amount estimated today, about 1,600 MEUR, is mainly related to extension of the distribution system to the about 40% of the population currently supplied by natural gas or other means of heating.

mai mare dintre sumele estimate in prezent si anume 1,600 milioane Euro, se refera la extinderea sistemului de distributie pentru racordarea a aproximativ 40% din populatie, care astazi se incalzeste cu gaze naturale, sau alte solutii de incalzire, diferite de termoficare.

Observation 2.1.3:

The data included in Report 2 “Analysis of the centralized transmission and distribution network” are not corresponding with current situation on 1st of August 2009, due to the fact that a certain projects were implemented or close to be implemented (replacing of the transmission/distribution pipes, heat exchangers for hot tap water and heating, metering of primary system, pumps with variable speed, softening plant, balancing valves, expansion systems, etc). Unfortunately, the limited financial resources didn't allow continuing the implementation of the projects, in line with the provision of strategy and needs, for the replacing of pipes for the transmission system.

Observatia 2.1.3:

Datele prezentate in Raport 2 Analiza sistemului centralizat de transport si distributie a caldurii” nu corespund cu situatia existenta la 1 august 2009, datorita lucrarilor de investitii municipale finalizate sau in curs de finalizare (inlocuire conducte de transport/distributie, schimbatoare de incalzire si apa calda de consum, contorizare circuit primar si consumatori, pompe cu turatie variabila, module de tratare a apei, vane de echilibrare, module de expansiune, etc).

Din pacate, resursele financiare alocate incepand cu 2002, nu au permis continuarea investitiilor, conform strategiei si a necesitatilor, pentru inlocuirea conductelor de transport a energiei termice

Answer 2.1.3:

The data used for our analyses is based on the information provided by RADET in the data collection phase. The data collection report and analyses included in this report is approved by the Energy Committee.

The Consultant assume that the savings obtained from previous investments provided by the Municipality of Bucharest can carry loan services and provide financing for additional rehabilitation/modernisation works. Hence, it is not understood why financial resources are not available.

Raspuns 2.1.3:

Datele utilizate in analizele intocmite au la baza informatiile furnizate de RADET in etapa de colectare de date. Colectarea de date precum si analizele incluse in acest raport, au primit avizarea Comitetului Energetic Municipal.

Consultantul considera ca din economiile obtinute ca urmare a implementarii proiectelor anterioare, finantate de PMB, ar fi trebuit sa fie posibila acoperirea cheltuielile aferente creditelor si de asemenea sa se asigure finantare pentru lucrari suplimentare de reabilitare /modernizare. De altfel, nu este clar de ce nu sunt disponibile aceste resurse financiare.

Observation 2.1.4:

Report no 3 “Energetic Strategy of Bucharest Municipality” could be presented as a possible solution to be applied in the area where is not developed yet the district heating, later the surplus of cheap energy (without hidden subsidiaries or bonus) to be taken over by the municipal district heating system.

Observatia 2.1.4:

Raportul 3 “Strategia energetica a Municipiului Bucuresti” poate fi prezentata ca o solutie posibila de aplicat in zonele in care nu exista incalzire centralizata, urmand ca eventualul excedent de energie termica ieftina (fara subventii mascate sau bonificatii) sa fie preluat de instalatiile municipale de termoficare.

Answer 2.1.4:

The Energy Strategy is not a possible solution but a necessary solution if RADET and the Municipality intent to comply with relevant EU-Directives, the National Energy Strategy (which implement most of the relevant EU-Directives) and relevant Romanian laws and legislation.

Raspuns 2.1.4:

Strategia Energetica nu este o solutie posibila, ci este o solutie necesara, daca RADET si PMB intentioneaza sa se conformeze prevederilor Directivelor Europene, Strategiei Energetice Nationale (care implementeaza directivele UE relevante) si legislatiei aferente acestui domeniu.

Observation 2.1.5:

In case of private investors available to invest in new technical solution, shall be applied British principle (presented also by the consultants): municipality sign a full concession for waste incineration, solar panels, co-generation, inclusive operation of the systems, loan services, recovering the services from the consumers, direct/indirect subsidiaries or bonus.

Accordingly, we consider that the 220,000 apartments, not connected today to district heating (including the disconnected blocks of apartments) could be a serious place for the implementation of the proposal from Grontmij | Carl Bro.

It is necessary to inform the consultants that the municipality “ensure toilet paper and soap for the schools during the epidemic period and is able to solve themselves the social problems”.

The main problem of the municipality is to ensure equal conditions for all citizens and to attract private investor willing to invest in the new technical solution, to operate its and full and direct recover from the consumers (without interference of local authority) of the costs for loan reimbursement, maintenance, etc.

Answer 2.1.5:

Our recommendations are not taking privatisation so far as we propose the “British solution” with 100% private ownership. Some areas, for example the heat transmission, are proposed remaining the property of the municipality as it will be impossible to establish competition.

Try to look search the WEB for “social problems Romania” and you’ll find different statements, for example try:

<http://www.eu-digest.com/2007/11/hotnews-romania-romania-acting-like.html>

If we talk about equal conditions regarding heat supply we are not aware that the municipality support the natural gas consumers – they will have to pay a connection fee, pay for boiler installation and a non-subsidised gas tariff. If the proposed Energy Strategy is implemented an equal situation will, over some years, be obtained as the tariff structure for district heating will be cost related and general subsidises including investment subsidises removed.

Observatia 2.1.5:

Daca pentru solutiile noi propuse exista investitori privati dispusi sa le implementeze, trebuie aplicat principiul britanic (prezentat si de consultantii): municipalitatea ofera acord de concesiune totala privind incinerarea deseurilor, panourile solare, producerea de energie termica-electrica, inclusiv exploatarea instalatiilor, contractarea-returnarea creditelor, recuperarea de la consumatori a serviciilor, subventiilor- bonificatiilor directe sau indirecte.

In acest sens consideram ca cele 220 000 apartamente – locuinte care nu sunt racordate la sistemul de termoficare (inclusiv blocurile debransate) pot constitui o oferta serioasa pentru aplicarea propunerilor Grontmij Carl Bro.

Pentru consultantii trebuie precizat ca PMB “asigura hartie igienica si sapun la scoala in perioadele de epidemii si isi rezolva singura problemele sociale”.

Problema de baza a municipalitatii este de a asigura conditii egale pentru toti locuitorii si atragerea investitorilor privati dispusi ca prin aplicarea Strategiei energetice sa asigure implementarea solutiilor noi, exploatarea acestora si recuperarea totala si directa de la consumatori (fara interventii ale administratiei locale) a costurilor necesare rambursarii creditelor, mentenantei etc

Raspuns 2.1.5:

Recomandarile noastre nu iau in considerare privatizarea conform “modelului britanic”, cu 100% proprietate privata. Anumite zone, ca de exemplu sistemul de transport este propus a ramane in proprietatea primariei, in conditiile in care va fi imposibil sa se obtina competitie.

Daca incercati sa cautati pe internet “probleme sociale in Romania” veti gasi diferite declaratii, ca de exemplu:

<http://www.eu-digest.com/2007/11/hotnews-romania-romania-acting-like.html>

Daca discutam despre conditii egale, privind furnizarea caldurii, nu avem informatii, cum ca primaria subventioneaza si consumatorii care se incalzesc cu gaze naturale – ei trebui sa plateasca o taxa de conectare, sa plateasca pentru instalarea unui cazan si sa plateasca un tarif de gaze naturale nesubventionat. Dace se va implementa Strategia Energetica, peste cativa ani, se va putea vorbi de conditii egale, astfel tariful energiei termice din termoficare se va baza de costuri reale si subventiile generale vor fi eliminate, ca de altfel si cele acordate pentru investitii.

Observation 2.1.6:

Regarding proposed suggestions for the current district heating system, we consider that all these are not correlated with the current situation, specific for installation operated by RADET and also related to the legal aspects of public and private property where these installations are placed.

The solutions regarding solar panel, bio fuel, heating module, etc are known in Romania and also by Danish Consultants who worked for the project under PHARE programme, but were not included in the study for the rehabilitation.

Even the administrative situation could allow the reconfiguration of the new networks, the placing of the CHP – HoB (including the deposit for the bio fuel with the requested protection area), the proposed “strategy” cannot be promoted without the approval of City Council, of the governmental organisations (Ministry of Administration and Internals, Ministry of Environmental, Ministry of Agriculture, National Regulatory Authority for Electricity) and of competent non governmental organisations (Universities Design Institute and Research institutes, etc)

Answer 2.1.6:

The proposed solutions are fully in-line with Romanian legislation implementing relevant EU-Directive. However, it is true that not all secondary legislation is in place yet but for the purpose of the Energy Strategy we have assumed that this is just a matter of time.

How can you propose that ISPE, a private design institute elaborating strategies in competition with Grontmij | Carl Bro, Ramboll, MVV and other international consulting companies, shall approve the Energy Strategy????

Observation 2.1.7:

We consider that the fully implementation of the proposed solutions will not reduce the financial effort to be made by the municipality (reimbursement of loans, direct or indirect subsidiaries). Whether the operator is state owned or private, the loan services shall be paid not depending on evolution on prices for bio fuel, meteorological condition, thermal rehabilitation of the client, payment of the subsidiaries/bonus regarding domestic waste incineration so production of bio fuel.

Considering all above, we consider that the implementation of this strategy imply obtaining the

Observatia 2.1.6:

In ceea ce priveste sugestiile pentru actualul sistem de incalzire prin termoficare, consideram ca acestea nu sunt corelate cu situatia existenta, atat in ceea ce priveste instalatiile exploatate de RADET cat si cu realitatea juridica a proprietatilor publice si private pe care sunt amplasate.

Solutiile privind panourile solare, biocombustibili, module, etc se cunosteau atat in Romania cat si de catre consultantii danezi, care au lucrat in cadrul programului PHARE, dar nu au fost incluse in studiul de reabilitare.

Chiar daca situatia administrativa ar permite reconfigurarea retelelor noi, amplasarea de substatii sau CET-CT (inclusiv depozitele de biocombustibili cu zonele de protectie aferente), ”stategia” propusa nu poate fi promovata decat cu aprobarea CGMB, a organizatiilor guvernamentale (Ministerul Administratiei si Internelor, Ministerul Mediului, Ministerul Agriculturii, ANRE) si a organizatiilor nonguvernamentale abilitate (UPB, UCB, INCERC, IPB, ISPE, etc)

Raspuns 2.1.6:

Solutiile propuse sunt in deplina concordanta cu legislatia din Romania, care implementeaza directivele europene relevante. Totusi, este adevarat ca nu toata legislatia secundara este elaborata in corelare cu legislatia primara, dar pentru scopul Strategiei Energetice, noi am considerat ca aceasta este doar o chestiune de timp.

Cum puteti sa lansati ideea ca ISPE, care este un institut privat de proiectare si care la randul sau elaboreaza strategii in competitie cu Grontmij | Carl Bro, Ramboll, MVV si alte companii de consultanta internationale, trebuie sa aprobe Strategia Energetica????

Observatia 2.1.7:

Consideram ca implementarea integrala a solutiilor propuse nu va diminua efortul financiar al municipalitatii (rambursare credite, subventii directe si indirecte). Indiferent daca administratorul este de stat sau privat, creditele vor trebui platite la timp, indiferent de evolutia preturilor biocombustibililor, conditii meteo, reabilitarea termica a clientilor, asigurarea subventiilor – bonusurilor privind arderea deseurilor menajere sau producerea biocombustibililor.

In acest sens consideram ca aplicarea unor elemente din aceasta strategie implica aprobarea atat a CGMB

approval from City Council and also from other governmental organisations (Ministry of Administration and Internals, Ministry of Environmental, Ministry of Agriculture, National Regulatory Authority for Electricity) which shall ensure financial resources for a period of 15-20 years necessary for the implementation period and later for the operation of these new installation no matter the level of money collection and operator(private or state)

Answer 2.1.7:

There is only one reasonable way to reimburse loans and that is to include the loan services in the tariff.

When change of ownership (if this method of privatisation is selected) the future owner and concessionaire will have to pay the municipality the value of the system taken over minus the debt in the system.

It is completely out-of-line to assume that several ministries and authorities shall provide financial resources for the district heating system. The National Energy Strategy is clear in this respect: "Financial resources for must be obtained from privatisation and private sources".

Observation 2.1.8:

We consider also that is necessary a re-evaluation of the costs, because the 5 billions Euro cannot cover the cost for the proposed location, mainly the utilities for the new 100 thermal substations and 50 new HoB and specifically for the deposits for fuel, 15-20,000 braches for water, electricity, etc.

Also, there is necessary to be considered the real costs for the intermediary stations for sorting the waste, units for necessary to ensure raw material and production of bio fuel, maintenance costs, bonus to be paid by somebody to the supply of raw material.

We consider that the initial estimation could be overcome with 3-5 billion and failure to implement it could compromise the goal of the programme to eliminate the direct and indirect subsidiaries.

Answer 2.1.8:

The total estimated cost is about 3.200 billion EUR covering the cost mentioned in the appendixes to the Strategy Report.

Cost of waste handling including sorting shall have no influence on the district heating tariff (this will be illegal cross-subsidises). It is assumed that a gate fee at the same level as at new landfills shall be paid. This, together with sale of heat, electricity and green certificates will generate a huge profit for the waste-to-

cat si a organizatiilor guvernamentale (Ministerul Administratiei si Internelor, Ministerul Mediului, Ministerul Agriculturii, ANRE), care timp de 15-20 ani trebuie sa asigure resursele financiare si legale necesare implementarii si exploatarii noilor instalatii indiferent de gradul de incasare si operator (de stat sau privat)

Raspuns 2.1.7:

Exista doar o singura cale rezonabila pentru a putea rambursa creditele si anume aceea prin care cheltuielile aferente creditului se regasesc in structura de tarif.

La schimbarea formei de proprietate (daca se alege metoda privatizarii) viitorul proprietar si concesionar va trebui sa plateasca primariei valoarea sistemului preluat, minus datoriile din sistem.

Este complet neadecvat sa se considere ca anumite ministere si autoritati trebuie sa asigure finantare pentru sistemul de termoficare. Strategia Energetica Nationala este foarte clara in acest sens " efortul investitional va fi sustinut in principal prin privatizare si investitii private".

Observatia 2.1.8:

Consideram ca de asemenea este necesara reevaluarea costurilor, deoarece cei cca 5 miliarde de euro nu pot asigura locatiile propuse, utilitatile la cele 100 noi substatii si 50 noi centrale locale si in mod deosebit asigurarea depozitelor de biocombustibil, 15-20 000 bransamente de apa, electricitate, etc

De asemenea trebuiesc luate in considerare costurile reale pentru statiile de sortare deseuri, unitatile de asigurare a materiilor prime si de productie a biocombustibililor, cheltuielile de mentenanta, bonificatii pe care cineva trebuie sa le plateasca furnizorilor de materii prime.

Apreciem ca evaluarile initiale pot fi depasite cu 3-5 miliarde, iar nerealizarea acestora poate compromite un program care isi propune ca dupa implementare sa elimine complet subventiile directe sau indirecte.

Raspuns 2.1.8:

Costul total estimat este de aproximativ 3,2 miliarde Euro acoperind costurile mentionate in anexele la Raportul privind Strategia.

Costul manipularii deseurilor, inclusiv sortarea nu trebuie sa aiba influenta asupra tarifului energiei din termoficare (va fi ilegal, fiind considerate subventii incrucisate). Se considera ca trebuie platita o "taxa la poarta" incineratorului, la acelasi nivel cu taxa de depozitate intr-o groapa ecologica noua. Aceasta

energy facility. It will then be a political decision how this profit shall be used: as royalty to the municipality, to reduce the gate-fee, to reduce the heat tariff or to be reinvested.

We have assumed market prices as forecasted by the International Energy Agency and used by World Bank and EBRD for fuels. These forecasts are in EUR/GJ and the cost of raw materials is of cause included in the whole-sale prices.

Observation 2.1.9:

Regarding the direct administration of district heating by Municipality through RADET we specify:

In case, there is desired the implementation of high efficient co-generation (as described by EU Directives) the strategy shall include "in the same package" the rehabilitation of the old and new CHP (no matter the owner) of the installations owned by municipality of the installations owner by the consumers.

Operation and rehabilitation of the existing locations will allow reducing of the total losses with 10%, connection of new consumers, including taking over of the renewable energy. (the current volume of 200,000 m³ of the primary system could replace the future heat accumulation to be placed underground or over ground).

Currently, the primary system is oversized, but these pipes ensure permanent supply even it appear a failure of the sources or in case of disconnection from the system (CHP Pipera, Griro).

In the same time the primary system is acting as a accumulator, accumulating the momentary excess of heat and allowing to take over new consumers or new heat sources.

Answer 2.1.9:

Renewable energy has priority over cogeneration based on CO₂ emitting fuels. Thus, construction of new or rehabilitation of existing units cogeneration is only relevant to the extent the renewable resources are exhausted.

Any argument for maintaining a transmission system designed for more than 5,000 MJ/s when the future requirement will be about 400 MJ/s cannot be considered seriously.

taxa, impreuna cu vanzarea de energie termica, electricitate si certificate verzi, vor aduce un profit imens facilitatilor de incinerare a deseurilor. Va fi atunci necesar, luarea unei decizii politice asupra modului in care acest profit poate fi utilizat: ca o redeventa platita primariei, reducerea "taxei la poarta", pentru reducerea tarifului la energia termica sau ca acest profit sa fie reinvestit.

In calculele noastre am considerat evolutia preturilor la combustibili, asa cum este prognozata de catre Agentia Internationala de Energie si utilizata de catre Banca Mondiala si BERD. Aceste prognoze sunt exprimate in Euro/GJ, iar costul materiilor prime sunt desigur incluse in pretul total de vanzare.

Observatia 2.1.9:

In ceea ce priveste sistemul de incalzire administrat de PMB prin RADET precizam urmatoarele:

Daca se doreste implementarea cogenerarii de inalta eficienta (asa cum sunt directivele UE) strategia energetica a Municipiului Bucuresti trebuie sa includa "la pachet" retehnologizarea surselor vechi si noi (indiferent de proprietar) a instalatiilor administrate de municipalitate si a instalatiilor proprietate a clientilor.

Folosirea si retehnologizarea locatiilor existente, va permite scaderea pierderilor totale sub 10%, preluarea de noi consumatori, inclusiv preluarea energiei termice produse din sursele neconventionale. (Amplasarea supraterana sau subterana de acumuloare de energie termica poate fi suplinita de volumul apei din retelele primare, cca 200 000 m³)

Momentan, retelele magistrale de agent termic primar sunt supradimensionate, dar prin ele se asigura furnizarea permanenta a energiei termice, chiar si in situatii de avarii a unei surse, sau in situatii de decuplare de la sistem (CET Pipera, Griro)

In acelasi timp prin retelele magistrale se acumuleaza excedentele momentane de energie termica de la surse si permit si preluarea noilor consumatori sau furnizori de energie termica.

Raspuns 2.1.9:

Energia regenerabila are prioritate chiar si in fata cogenerarii, care utilizeaza combustibil cu emisii de CO₂. In acest sens, construirea de noi capacitati sau reabilitarea celor existente este relevanta doar in contextul in care, potentialul de surse regenerabile este epuizat.

Orice argument in favoarea mentinerii unui sistem de transport proiectat pentru mai mult de 5,000 MJ/s, in conditiile in care cerintele viitorului vor fi de circa 400 MJ/s, nu poate fi considerat serios.

Observation 2.1.10:

The priorities of Bucharest Municipality regarding district heating with cogeneration are:

- Rehabilitation of the existing producing CHP, under different type of ownership

This excludes solar energy and waste-to-energy and will increase the production costs without obtaining significant efficiency improvements and reduction in transmission costs.

To bring the existing CHP plants in compliance with the EU definition of CHP will be extremely costly if technical possible.

- Reconnection of CHP Pipera and Grivita to the system, rehabilitation of those by private partnership, including taking over by PMB – RADET.

There is currently no lack of production in the system so why reconnect two inefficient plants to the system? By the way, Pipera is not a CHP plant.

- Erection of CHP in Colentina-Fundeni area, where the pipe system is sized accordingly.

For sure a decentralised production system should include CHP production in the Colentina-Fundeni area. However, what to decommission as there is no need of additional production capacity in the system?

- Closing of the second ring in the district heating system (Pantelimon – Fundeni - Colentina, Colentina - Dna Ghica - Dimitrie Pompei - Aviatiei, Aviatiei – Baiculesti - Pajura, Drumul Taberei - Alexandriei, Alexandriei – Rahova - Ferentari);

With decreasing demand and change from centralised to decentralised and local production there will be need of less pipes – not more pipes.

- Total replacing during maximum 5 years of the pipes with over 30 year old operation period, or pipes with low quality thermal isolation, with two times measured heat losses (reducing of heat losses with over 12-15% will allow reimbursement of the loans without any financial problems);

The proposal is in-line with the measures outline in the Energy Strategy but lacks the aspect of reducing the heat losses by reducing the diameters and length of pipes (as a consequence of the decrease in demand).

- Replacement of the pipes and thermal isolation in the technical basements of the blocks of flats, no matter the owner.

RADET must understand that maintaining

Observatia 2.1.10:

Prioritatile privind incalzirea prin termoficare "COGENERARE" a Municipiului Bucuresti sint:

- Retehnologizarea surselor existente, indiferent de proprietar

Aceasta exclude energia solara si facilitatile de incinerare si va conduce la cresterea costurilor de productie, fara a se obtine o imbunatatire semnificativa a eficientei si nici o reducere a costurilor de transport.

Pentru a se aduce CET-urile existe la cerintele definite de Directivale Europene pentru acestea, va fi extrem de scump si nu intotdeauna va fi posibil si tehnic

- Recuplarea la sistem a CET Pipera si CET Grivita, reehnologizarea si parteneriat public privat, inclusiv preluarea de catre PMB-RADET.

In prezent, in sistem nu se inregistreaza o lipsa a necesarului de productie, asadar de ce este necesara reconectarea in sistem a doua surse ineficiente? Si mai mult Pipera nu este o centrala in cogenerare.

- Construirea unui CET in zona Colentina - Fundeni unde exista si conducte dimensionate corespunzator.

Desigur, sistemul de productie descentralizat trebuie sa includa si producerea in cogenerare in zona Colentina-Fundeni. Totusi, avand in vedere faptul ca nu este necesara o capacitate suplimentare de productie in sistem, ce se va dezafecta din capacitatea existenta odata cu construirea celei noi?

- Incheierea celui de-al doilea inel de termoficare (Pantelimon-Fundeni-Colentina, Colentina-Dna Ghica-Dimitrie Pompei-Aviatiei, Aviatiei-Baiculesti-Pajura, Drumul Taberei-Alexandriei, Alexandriei-Rahova-Ferentari);

In conditiile in care cererea de caldura este in scadere, iar producerea centralizata se va inlocui cu cea descentralizata, este evident ca va fi nevoie de mai putine tevi si in nici un caz de mai multe.

- Inlocuirea integrala in maxim 5 ani a conductelor ce sunt in functiune de peste 30 ani sau la care pierderea masurata de energie termica prin izolatia este dubla (reducerea pierderilor de la 20-25% la 8-10-12% va permite rambursarea fara probleme a creditorilor);

Propunerea este in corelare cu masurile specificate in Strategia Energetica, dar nu ia in considerare aspectul legat de necesitatea reducerii pierderilor de caldura prin reducerea diametrelor si a lungimii conductelor (ca si o consecinta a scaderii cererii de caldura).

- Inlocuirea conductelor si izolatiilor termice din

pipes in private buildings is not a public obligation. A support scheme for energy rehabilitation of buildings is already under implementation and the private owners can obtain financial support for insulation of heating pipes under this scheme.

- Connection to the district heating of all local HoB in the vicinity of transmission pipes, and its conversion into thermal substation or small CHP unit.

The proposal is in-line with the measures outline in the Energy Strategy. The existing boilers should than be operated as local peak-load boilers in the future.

- Special condition (favourable) for connection of the new consumers to the district heating (insurance of the internal resources for RADET – PMB to perform the works in the public area, including metering).

Connection to the district heating system should be motivated as in other countries by:

- *Tariffs significant below other means of heating.*
- *High service level (heat and hot tap water on demand).*

Until RADET can offer this we can forget all about connection of new consumers.

- Separation and metering of public consumers (industrial) inside commercial complex or from the ground floor of the blocks

Metering of public consumers (industrial) should be completed long time ago, so no comments on this observation.

- Replacement of the inside heating installation of the blocks considering separate supply of the apartments and tri-generation.

RADET must understand that the internal heat (and cooling) distribution in private owned buildings is not a concern for a public utility.

- Insurance of financing for building of the intermediary station (to limit the pressure temperature) in order to be able to implement heating modules in all buildings placed in the adjacent are to the transmission pipes (in this solution the heating modules and related two supply pipes will more cheap than the direct connection)

RADET must understand that the internal heat (and cooling) distribution in private owned buildings is not a concern for a public utility.

subsolurile tehnice indiferent de proprietar; RADET ar trebui sa inteleaga ca intretinerea tevilor in interiorul cladirilor private nu reprezinta o obligatie publica. RADET ar trebui sa cunoasca faptul ca in prezent exista in vigoare o schema de sprijin financiar pentru reabilitarea termica a cladirilor care permite proprietarilor sa obtina finantare pentru lucrari de interventie la instalatia de distributie a agentului termic aferenta partilor comune ale blocurilor de locuinte.

- Racordarea la termoficare a tuturor CT aflate in zone limitrofe conductelor de circuit primar, concomitent cu transformarea in PT sau CET de mica putere;
Propunerea este in linie cu masurile incluse in Strategia Energetica. Cazanele existente ar trebui exploatare in viitor ca si cazane pentru acoperirea varfului de consum.
- Facilitati pentru racordarea noilor consumatori (asigurarea resurselor interne pentru ca RADET – PMB sa execute lucrarile din domeniul public, inclusiv contorizarea).
Conectarea la sistemul de incalzire centralizata ar trebui motivata , asa cum se intampla in alte tari prin:

- *Tarife semnificativ mai mici decat cele din alte moduri de incalzire*
- *Nivel ridicat de servicii (caldura si apa calda de consum menajer la cerere)*

Pana cand RADET nu va putea oferi acestea conditii, trebuie uitat de conectarea noilor consumatori.

- Separarea si contorizarea agentilor economici din complexele comerciale sau parter de bloc;
Contorizarea agentilor economici este o activitate care trebuia a fi finalizata cu mult timp in urma, din acest motiv nu avem comentarii.
- Inlocuirea instalatiilor interioare din blocuri concomitent cu asigurarea alimentarii separate a apartamentelor, inclusiv trigenerarea.
RADET trebuie sa inteleaga ca distributia caldurii (si a racirii) in interiorul unor cladiri private nu este o responsabilitate pentru un operatorii de utilitati publice.
- Asigurarea finantarilor pentru realizarea de statii intermediare de limitate a presiunilor temperaturilor in vederea implementarii modulelor la toate cladirile amplasate in zonele limitrofe retelelor de transport a caldurii (in acest fel, atat modulele cat si cele doua conducte aferente vor fi mult mai ieftine ca la racordarea directa).
RADET trebuie sa inteleaga ca distributia caldurii (si a racirii) in interiorul unor cladiri

private nu este o responsabilitate pentru un operatorii de utilitati publice.

Answer 2.1.10:

Answers are included with *Italic* in the text above and we maintain the same replay on the same comments as last time.

Raspuns 2.1.10:

Raspunsurile sunt aceleasi, la aceleasi observatii ca si data trecuta si sunt incluse cu caractere *italic*

Observation 2.1.11:

Maybe, could be relevant to be done an analysis of the heating in Bucharest applying the principle “value of the electricity”: that means that the heat consumers should pay the costs related the production in the CHP minus “value of electricity” produced in the condensation mode.

“Value of electricity” means the cost of electricity produced in other power plant from the national energetic system in the condensation mode.

In terms of marginal cost on long terms, this is the value of electricity produced in the coal power plant in the condensation mode.

Observatia 2.1.11:

Poate ar fi interesant de facut o analiza a incalzirii Municipiului Bucuresti aplicand principiul “valoarea energiei electrice” : consumatorul de caldura plateste toate costurile legate de productia din centrale electrice de termoficare, care livreaza caldura in sistemul de incalzire al orasului, minus “valoarea energiei electrice” generate de aceeasi sursa in regim de condensatie.

“Valoarea energiei electrice” este data de costul energiei electrice generata in centrale cu condensatie din sistemul energetic national.

In termenii costului marginal pe termen lung, aceasta este valoarea energiei electrice generata in centrale cu condensatie pe carbune.

Answer 2.1.11:

Before we can discuss “value of electricity” method we must agree that there are three operation conditions for cogeneration plants:

1. The plant is in operation requested by the heat side to cover a heat demand.
2. The plant is in operation requested by the power side to cover a power demand.
3. The plant is in operation requested both by the heat side and the power side to cover both a heat demand and a power demand.

In situation 1) the plant must sell the power at the pool price of the national grid. The heat price should thus be: Total variable costs minus income from sale of power (spot price of power).

In situation 2) a sale of heat will reduce the sale of power with the power/heat ratio for the plant. The cost of heat should thus be: The costs of reduced sale of power. This cost can be calculated as: (Production in condense mode – loss of power due to heat production) x spot price of power.

In situation 3) the heat price should be calculated as in situation 2) but the benefit of cogeneration (difference between alternative heat production price and actual heat production price should be share between the power and the heat side.

Other methods are seen and a very complicated method and non-transparent calculation method is

Raspuns 2.1.11:

Inainte de a discuta principiul “valoarea energiei electrice” trebuie acceptat ca exista 3 conditii pentru exploatarea centralelor de cogenerare:

1. Centrala este exploatata pe baza cererii de caldura si sa acopere aceasta cerere.
2. Centrala este exploatata pe baza cererii de electricitate si sa acopere aceasta cerere.
3. Centrala este exploatata atat pe baza cererii de electricitate cat si de caldura si sa acopere amandoua cereri.

In prima situatie, centrala trebuie sa vanda electricitate la pretul binom al retelei nationale. Pretul energiei termice poate fi in acest caz: total costuri variabile minus venituri din vanzarea de electricitate (pretul spot la electricitate).

In a doua situatie, vanzarea de caldura va reduce vanzarea de electricitate cu ponderea electricitate/caldura a centralei. Costul caldurii in acest caz, ar putea fi: Costurile generate de reducerea vanzarii de electricitate. Acest cost se poate calcula dupa cum urmeaza: (producere in condensatie – pierderi de putere datorita producerii de caldura) X pretul spot de vanzare al electricitatii.

In a treia situatie, pretul energiei ar putea fi calculat ca si in situatia a doua, dar beneficiul cogenerarii (diferenta dintre pretul de producerea alternativa a caldurii si pretul actual de productie a caldurii trebuie

currently used in Romania. Independent of the method to be used it must ensure that there is no cross-subsidies between the sectors.

Power produced from renewable sources shall have priority to the national electricity grid and the EU member states are obliged to ensure a feasible tariff. In Romania, as in many other countries, the feasibility of renewable energy will be obtained by introduction of Green Certificates. These certificates will be sold by the renewable energy producers to producers emitting CO₂. Thus, in this scheme RADET will have to procure Green Certificates corresponding to the CO₂ emission related to the production of heat from existing plants.

Introduction of Green Certificates and introduction of other energy and environmental taxes is the economical background for recommendation of renewable sources in the National Energy Strategy and subsequent in the recommended Energy Strategy for Bucharest Municipality.

The main problem with the method proposed in the observation is that the marginal cost of power generated from coal is significant cheaper than power generated from natural gas. Hence, the heat side will have to compensate this difference.

Observation 2.1.12:

We mention, also that before the implementation of a municipal strategy, it is necessary to establish public private partnership with the bio fuel suppliers, electricity suppliers, gas supplier, energetic waste supplier, in terms of prices and quantities during summer-winter.

Also there is necessary an update of the real structure of costs, tariffs for each proposed solutions: value of direct investment, interest, price of fuel, renewable energy, hidden value of subsidiaries – bonus for the thermal energy produced by the waste incineration, bio fuel (subsidiaries from agriculture), maintenance expenditures.

If in the tariff structure is not included the cost for the reimbursement of the loan and remove of subsidiaries, there is necessary to be ensured the financial resources in order to be able to fulfil the financial obligation.

In case the real costs are not covered by tariffs, the owner shall ensure the financial resources, or to decide what are the activities to be renounced on it.

At administrative and politic level there is necessary to be analysed the possibilities to not include in the tariff, until the rehabilitation of the pipes, the difference

impartit intre electricitate si caldura.

Alte metode sunt disponibile si de asemenea o metoda complicata si netransparenta de calcul este utilizata in prezent in Romania. Indiferent ce metoda va fi folosita, trebuie sa existe asigurare ca nu vor fi subventii incrucisate intre sectoare.

Electricitatea produsa din surse regenerabile trebuie sa aiba prioritate in reseaua energetica nationala si statele membre sunt obligate sa asigure un tarif fezabil. In Romania, ca si in multe alte tari, fezabilitatea energiei din surse regenerabile va fi obtinuta prin introducerea certificatelor verzi. Aceste certificate vor fi vandute de catre producatorii de electricitate din surse regenerabile, producatorilor care emit CO₂. In acesta schema RADET, va trebui sa cumpere certificate verzi, corespunzator cu cantitatea de CO₂ emisa de catre centralele existente, care produc caldura.

Introducerea certificatelor verzi si a altor taxe pe energie si mediu constituie baza economica pentru recomandarile incluse in Strategia Energetica Nationala si in consecinta si in recomandarile Strategiei Energetice a Municipiului Bucuresti.

Principala problema legata de metoda propuse in observatiile RADET, este aceea ca pretul marginal al producerii de electricitate pe baza de carbune este mai mic decat cel pentru electricitatea pe baza de gaze naturale. In consecinta, componenta caldura va trebui sa compenseze aceasta diferenta.

Observatia 2.1.12:

Mentionam de asemenea ca, anterior implementarii unei strategii municipale, este necesara stabilirea unor parteneriate pe 15-20 ani cu furnizorii de biocombustibili, gaze, electricitate, deseuri energetice, atat in privinta preturilor cat si in privinta cantitatilor vara-iarna.

Deasemenea ar trebui reactualizata structura reala a costurilor, tarifelor pentru fiecare din solutiile propuse: valoare investitiei directe, valoare dobanzi, pret combustibil, energie neconventionala, valoarea mascata a subventiilor- bonificatiilor pentru energia termica rezultata din arderea deseurilor menajere, biocombustibil (subventii in agricultura), cheltuieli de mentenanta.

Daca prin tarife nu se asigura rambursarea creditelor si eliminarea subventiilor, trebuiesc asigurate resursele pentru respectarea angajamentelor financiare.

In situatia in care costurile reale nu sunt acoperite de tarife, proprietarul trebuie sa asigure resursele financiare, sau sa decida care sunt activitatile la care se renunta.

La nivel administrativ si politic ar trebui analizata posibilitatea ca, pana la retehnologizarea conductelor,

between real heat losses and the EU theoretical value of these losses. The owner shall ensure the related financial resources and these one shall not be considered as subsidiaries.

There is not normal that the consumers and special new consumers to pay for the heat losses in the installation with commissioned 20-30-40 years ago (the thermal insulation cannot be replaced before the pipes are replaced).

Taking into consideration that the heat losses in the primary and secondary system are in range of 22-25%, annual investments for rehabilitation shall be 15-20% of the value for bought thermal energy /around 2500 billion lei).

Answer 2.1.12:

It is correct that before privatisation it is necessary to establish the real cost structure for the existing system. It will not be possible to establish the negotiation goals without.

In appendixes to the Energy Strategy we have establish a comprehensive cost structure and we have to our best capability established a cost related tariff with a breakdown in administrative costs, fees to be paid by the consumers, capacity costs and energy costs.

As the current approved tariff only include administrative and operation costs and the bookkeeping performed by RADET lack transparency the established costs must of cause be corrected when more accurate values become available. The first step in this process is that RADET establish a bookkeeping where the mentioned cost components can be identified and benchmarking values to demonstrate where improvement in performance is most feasible.

Heat losses must be included in transmission tariffs and distribution tariffs and in the end there will be no other to pay these losses than the consumers (unless of cause RADET succeed by obtaining municipality subsidises to which also the natural gas consumers participate when paying there taxes).

We have never before heard about a tariff system based on the time you connected to the system. Of cause this will be possible but is not realistic to the opinion of the consultant.

diferenta dintre pierderile reale prin izolatiile termice si pierderile teoretice UE sa nu fie incluse in tarif. Proprietarul sa asigure resursele financiare fara ca acest lucru sa fie considerat subventie.

Nu este normal ca abonatii si in mod deosebit noii consumatori sa plateasca pierderile prin izolatiile termice ale instalatiilor aflate in functiune de peste 20-30-40 ani (izolatiile termice nu pot fi inlocuite decat dupa decopertarea si inlocuirea conductelor)

Avand in vedere ca pierderile prin izolatiile termice ale conductelor primare si secundare sunt de cca 22-25%, investitiile anuale pentru retehnologizare (inlocuire conducte si izolatii) ar trebui sa fie 15- 20% din contravaloarea energiei termice cumparate (cca 2500 miliarde lei)

Raspuns 2.1.12:

Este corect ca inainte de privatizare sa se stabileasca structura reala a costurilor in sistemul actual. Nu va fi posibila negocierea obiectivelor fara ca aceste costuri sa fie cunoscute.

In anexele Strategiei Energetice am stabilit o structura comprehensiva a costurilor iar in baza celor mai bune cunostinte am stabilit o structura de tarif bazata de costuri, formata din: costuri administrative, taxe care trebuie platite de consumatori, costuri de capacitate si costul energiei consumate.

In conditiile in care tariful aprobat include doar costuri administrative si de exploatare, in contabilitatea RADET, costurile stabilite cu lipsa de transparenta, trebuie de asemenea corectate atunci cand vor fi disponibile valori mai precise. Prima etapa in acest proces este aceea prin care RADET va stabili modul in care va fi posibila identificarea in contabilitate a componentelor de cost, permitand calcularea in consecinta a valorilor de benchmarking. Valorile de benchmarking vor putea demonstra ce imbunatatiri ale performantelor sunt cele mai fezabile.

Pierderile de caldura trebuie incluse in tariful de transport si in tariful de distributie, iar in final cel care le va plati va fi consumatorul (cu exceptia situatiei in care RADET, va obtine subventii din partea primariei, iar aceste subventii provin si de la platitorii de taxe care se incalzesc cu gaze naturale).

Nu am mai auzit pana acum de un sistem de tarificare diferit, bazat pe momentul in care consumatorul se racordeaza la sistem. Bineinteles ca acest lucru este posibil, insa in opinia Consultantului nu este realist.