



**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

Etapă a III-a: Strategia

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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.

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.

2 OBSERVATIONS AND ANSWERS

2.1 RADET

Regarding "Report 3" - Energetic Strategy of Bucharest Municipality, we submit the followings:

Observation 2.1.1:

"Report 3" has nothing to do with "Report 2": Results of the analysis of district heating system transmission and distribution and the study regarding rehabilitation of district heating system prepared by Danish power consult related to PHARE programme, rehabilitation programme financed by EIB, etc.

Answer 2.1.1:

The Strategy Report (Report 3) submitted in 2009 has nothing to do with the PHARE Study (Study on Bucharest district heating system) submitted in 1995 apart from some data and references taken from the PHARE Study when elaborating the Strategy Report.

Since 1995 a number of new developments have taken place. Most important are the EU membership and the subsequent implementation of EU directives and approval of a National Energy Strategy (approved by GD 1069/2007) having among others the following impact:

- Future financing shall be based on private investments (privatisation).
- Energy conservation shall bring the consumption in existing buildings down from more than 180 kWh/m²/y to about 100 kWh/m²/y.
- Solar energy shall play an important role in the heat production.
- About 20 waste-to-heat facilities shall be constructed in Romania in cities with above 150,000 inhabitants.

It should be obviously clear that implementing these and other measures will result in a very different RADET organisation, production pattern, transmission structure and distribution structure than the present.

Observation 2.1.2:

"Report 3" not offers solution for Energetic Strategy of Bucharest Municipality, because only 1.2 million people from 2.5 million being the total number of people in Bucharest are connected to the district

2 OBSERVATII SI RASPUNSURI

2.1 RADET

In ceea ce priveste "Raportul 3" – Strategia Energetica a Municipiului Bucuresti, va transmitem:

Observatia 2.1.1

"Raportul 3" nu are nici o legatura cu "Raportul 2": Rezultatele analizei sistemului centralizat de transport si distributie a energiei termice si studiul de reabilitare a Sistemului de Termoficare intocmit de Danish Power consult in cadrul programului PHARE, programe de reabilitare cu credite BEI, etc.

Raspuns 2.1.1

Raportul privind Strategia (Raportul 3) transmis in 2009, nu are nici o legatura cu Studiul PHARE (Studiu asupra sistemului de termoficare din Bucuresti) transmis in 1995, cu exceptia unor date si referinte incluse in Studiul PHARE, care au fost utilizate la elaborarea Raportului privind Strategia.

Incepand cu anul 1995, in Romania, au fost inregistrate o serie de evolutii pozitive. Cea mai importanta fiind aderarea Romaniei la EU, avand ca implicatie directa implementarea Directivelor Europene si aprobarea Strategiei Energetice Nationale (aprobata prin HG 1069/2007), avand printre altele urmatorul impact:

- Finantarea viitoare se va baza pe investitii private (concesiune cu aport de capital);
- Conservarea energiei trebuie sa conduca la reducerea consumului din cladirile existente de la peste 180 kWh/m²/an ajungandu-se sub 100 kWh/m²/an;
- Energia solara va juca un rol important in producerea de energie termica;
- Aproximativ 20 de facilitati de incinerare a deeurilor vor fi construite in Romania, in orase cu o populatie mai mare de 150,000 locuitori.

Este absolut evident ca implementarea celor de mai sus si a altor masuri vor implica: o organizatie complet diferita de cea prezenta a RADET, modele de productie, transport si distributie foarte diferite de structurile aflate in prezent.

Observatia 2.1.2:

"Raportul 3" nu prezinta solutii pentru Strategia Energetica a Municipiului Bucuresti, deoarece din cei 2,5 milioane locuitori doar 1,2 milioane locuitori sunt racordati la sistemul centralizat administrat de

heating system. Over 220,000 apartments are heated by other means: natural gas, liquid fuel, wood, etc.

Answer 2.1.2:

The Strategy Report consider the total heat demand of Bucharest and in order to obtain CO₂ neutrality in 2020 the present individual heated buildings are assumed converted to district heating or other renewable sources. The Heat Demand Forecast presented in the Strategy Report establish 90-95% of the heat demand in 2020 supplied by district heating and about 5-10% supplied by means of other renewables.

Observation 2.1.3:

A strategy which asked 8-10 billions Euro for investments, cannot be taken into consideration if is not included in the National Strategy, endorsed by the body empowered as: Ministry of Administration, Ministry of Environmental, National Regulatory Agency for Energy, Bucharest Polytechnic University, Bucharest Construction University, National Institute for Research and Development in Construction and in Construction Economy, etc

Answer 2.1.3:

The author must have read a different Strategy Report that the one submitted by the Consultants and must have completely misunderstood or misread Romanian legislation in force regarding district heating, the National Energy Strategy, relevant EU-directives and International Treaties endorsed by the Romanian parliament.

The Strategy Report establish a value necessary for implementing the strategies in the level of 3 – 3.5 billion EUR over the next 10-12 years (the 8-10 billion mentioned in the observation cannot be found in the report).

The Strategy Report is elaborated fully in respect of the National Energy Strategy, relevant EU-directives (most important in this respect the energy conservation and energy improvement directives, the CHP directive, the waste directive and the coming district heating directive) and international treaties (most importantly in this respect the Kyoto treaty). The Consultant would be very surprised if the author of the observations specifically can mention strategy aspects included in the Strategy Report out of line with the above mentioned preconditions.

RADET. Un numar de peste 220.000 apartamente isi asigura necesarul de incalzire prin gaze, combustibil lichid, lemn, etc.

Raspuns 2.1.2:

Raportul privind strategia ia in considerare faptul ca intregul necesar de incalzire, in Bucuresti, va deveni, la nivelul anului 2020, neutru din punct de vedere al emisiilor de CO₂, cu luarea in considerare si a cladirilor care sunt in prezent incalzite individual, ca vor fi racordate la sistemul de incalzire centralizata sau vor utiliza surse individuale de incalzire pe baza de energie regenerabila. Prognostica cererii privind incalzirea, la nivelul anului 2020, inclusa in Raportul privind Strategia, considera ca aproximativ 90-95% din cererea de caldura va fi asigurata din sistemul de incalzire centralizata si restul de 5-10%, din alte surse de energie regenerabila.

Observatia 2.1.3:

O strategie municipala ce implica investitii de peste 8-10 miliarde Euro nu poate fi luata in considerare daca nu este inclusa in strategia nationala, avizata de organele abilitate: MAI, Ministerul Mediului, ANRE, Institutii UPB, UCB, INCERC, etc.

Raspuns 2.1.3:

Autorul pare ca a citit un alt Raport privind Strategia decat cel care a fost transmis de catre Consultant si se pare ca are o intelegere gresita sau chiar nu a citit legislatia Romanesca in vigoare privind sistemul de incalzire centralizata, Strategia Energetica Nationala, Directivele Europene relevante in domeniu si Tratatul International, ratificate de catre Parlamentul Romaniei.

Raportul privind Strategia stabileste ca valoarea investitiilor necesare pentru implementarea strategiilor este la un nivel de 3-3.5 miliarde Euro in urmatoorii 10-12 ani (cele 8 -10 miliarde, mentionate in observatii nu se regasesc in Raportul privind Strategia).

Raportul privind Strategia este elaborat in deplina concordanta cu Strategia Energetica Nationala, Directivele EU relevante (cele mai importante in acest sens fiind cele referitoare la: conservarea energiei si eficienta energetica, cogenerare de inalta eficienta, gestionarea deseurilor precum si directiva care este pregatire referitoare la incalzirea centralizata) tratatele internationale (cel mai important dintre acestea fiind Protocolul de la Kyoto). Consultantul ar fi foarte surprins daca autorul acestor observatii ar putea sa identifice in Raportul privind

Strategia aspecte care sunt in contradictie cu oricare dintre preconditionile mentionate mai sus.

Observation 2.1.4:

“Report 3” under evaluates or not evaluates the necessary investments for the new 100 heat exchangers stations and 50 new local HoB in term of the related premises, connection to the utilities and specifically insurance of deposits for the bio fuels and extension of the natural gas network, etc.

Answer 2.1.4:

The cost estimates are elaborated based on known prices from similar private financed projects and not from prices from similar projects implemented by RADET. For reasons detailed explained in the Project Completion Report for Programme START the prices obtained by RADET are in general 20-40% higher than private financed projects.

Redesign and reconstruction of the transmission system will decommission about 400 of 500 substations (the future number of substations in the future system will be below 100). Some of the decommissioned substations are assumed selected for installation of heat-only-boilers and/or CHP units

Observation 2.1.5:

“Report 3”, could be considered as a catastrophe for Bucharest Municipality, from the point of view of energetic safety, in case of temporary crisis of natural gas market or a bio fuel.

Answer 2.1.5:

Again, the author of the questions must have read a different Strategy Report and the author demonstrate a complete lack of knowledge of the current supply conditions.

The district heating and most other heating in Bucharest is today based on natural gas and thus very vulnerable. The Strategy Report establishes a strategy for obtaining independency of imported fuels, fully in-line with the goals of the National Energy Strategy. When the Municipality Energy Strategy is fully implemented the heat sources will be almost equal amounts of solar energy, waste-to-energy and assumingly domestic produced bio fuels and thus provide:

- A very high security of supply;
- High cost independency of oil and natural gas prices;

Observatia 2.1.4:

“Raportul 3” subvalueaza sau nu evalueaza investitiile necesare in asigurarea locatiilor propuse, a utilitatilor la cele 100 noi substatii si 50 noi centrale locale, si in mod deosebit asigurarea depozitelor de “biocombustibil” si extinderea retelelor de gaze naturale, etc.

Raspuns 2.1.4:

Estimarea costurilor s-a facut in baza preturilor cunoscute din proiecte similare finantate din fonduri private si nu pe baza preturilor din proiecte similare implemenatate de RADET. Preturile obtinute de RADET sunt in general cu 20-40% mai ridicare decat cele din proiecte finantate din fonduri private, iar explicatiile pentru aceasta situatie sunt prezentate detaliat in Raportul de Finalizare al Programului START.

Reproiectarea si reconstructia sistemului de transport va conduce la dezafectarea a 400-500 de puncte termice (viitorul numar de puncte termice va fi sub 100). O parte din aceste locatii, aferente punctelor termice dezafectate, se presupune ca vor fi selectate pentru instalarea cazanelor de acoperirea varfului de consum si/sau a unitatilor de cogenerare descentralizate.

Observatia 2.1.5:

Din punct de vedere al sigurantei energetice, “Raportul 3” poate reprezenta o catastrofa pentru Municipiul Bucuresti, in cazul unor crize temporare a pietei gazului sau a biocombustibililor.

Raspuns 2.1.5:

Din nou, autorul acestor observatii se pare ca a citit un Raport privind Strategia diferit de cel transmis de consultant si demonstreaza o totala lipsa de cunostinte privind conditiile de furnizare.

Sistemul de incalzire centralizata si celelalte sisteme de incalzire, in Bucuresti se bazeaza pe gaze naturale si in consecinta sunt foarte vulnerabile. Raportul stabileste strategia pentru obtinerea independentei fata de combustibilul importat, in deplina corelare cu prevederile Strategiei Energetice Nationale. Cand Strategia Energetica Municipala va fi pe deplin implementata, sursele de incalzire vor fi in cantitati aproximativ egale, constand din energie solara, facilitati de incinerare si biocombustibil, considerat a fi produs in RO, asigurand:

- O foarte mare siguranta in furnizare;
- O independenta fata de costurile foarte

- Low environmental impact

ridicate pentru gaze naturale si petrol;

- Impact scazut asupra mediului.

Observation 2.1.6:

“Report 3” cannot be considered the Energetic Strategy of Bucharest Municipality if is not considering, in different type of the ownership, the existing producing sources and their related locations, specifically their capacity for fuel storage, able to ensure energetic safety, including the development of renewable sources on bio fuel, waste, etc

Observatia 2.1.6:

“Raportul 3” nu poate fi Strategia Energetica Municipala daca nu ia in considerare, indiferent proprietarul, sursele si locatiile energetice existente si in mod deosebit capacitatile de stocare ale combustibililor care pot asigura siguranta energetica inclusiv dezvoltarea unor capacitati alternative pe baza de biocombustibili, deseuri, etc.

Answer 2.1.6:

The ownership of the district heating system must follow the money. Attempts in Romania of obtaining private investment without transfer of ownership has so far failed as it has failed in all other countries. Thus, to maintain the district heating under public ownership will require that the necessary funds are provided as public funds which are by the Consultants considered impossible in a situation where the municipality cannot even provide toilet paper and hand soap to out school children in the middle of a flue epidemic and a huge number of social problems are unsolved.

The Strategy Report recommends a minimum storage at the plants and a larger storage at the existing production facilities.

A typically 5 MJ/sec boiler will use about 8 t/day of fuel when running full load. It should not be a problem establishing a logistic with 1 truckload per 2 days.

Raspuns 2.1.6:

Proprietatea asupra sistemului de incalzire centralizata trebuie sa urmareasca banii. Tentativele, in Romania de a obtine investitii private fara transferul proprietatii, va esua asa cum a esuat si in alte tari. In consecinta, pentru a mentine sistemul de incalzire centralizata in proprietate publica, vor fi necesare investitii publice, pe care Consultantul le considera ca fiind imposibil de asigurat de catre Primarie, in conditiile in care aceasta nu poate asigura hartie igienica si sapun copiilor la scoala in perioade de epidemii de gripa si nici rezolvarea unor diferite alte probleme sociale.

Raportul privind Strategia recomanda o capacitate minima de stocare la centrale si un sistem de stocare mai mare la nivelul facilitatilor de productie existente.

Un cazan tipic de 5MJ/s va folosi aproximativ 8 t/zi combustibil cand va functiona la intreaga capacitate. Nu va fi o problema sa se stabileasca o logistica cu un camion care alimenteaza o data la 2 zile.

Observation 2.1.7:

Until the connection of the new erected buildings (on the location of the former industrial area), to the municipal district heating network, the big capacity of transmission pipes (cca 200,000 m³) between CHP and Substations could be used as storage capacity for the thermal energy produced by the renewable sources (solar, waste-to-energy, small CHP units, etc)

Observatia 2.1.7:

Pana la racordarea la reseaua municipala de termoficare a ansamblurilor de cladiri construite pe locul fostelor platforme industriale, volumul mare al conductelor de transport a energiei termice de la CET-uri la PT de cartier(cca 200,000 mc) poate fi folosit pentru acumularea energiei termice produse in surse alternative: panouri solare, statii de incinerare, cogenerare de mica putere, etc.

Answer 2.1.7:

This is an interesting observation in relation to the necessity of having heat storages together with solar energy. This should be considered in the redesign of the transmission system.

Raspuns 2.1.7:

Aceasta este o observatie foarte interesanta in corelare cu necesitatea de a avea capacitati de acumulare a caldurii impreuna cu energia solara. Acest lucru ar putea fi luat in considerare in re proiectarea sistemului de transport.

Observation 2.1.8:

A part of solutions proposed by “Report 3” could be

Observatia 2.1.8:

O parte din solutiile prezentate in “Raportul 3” se pot

implemented in the new residential area ANL, third parties, block of flats disconnected from the district heating, historical area, new residential area under erecting, considering “British model”: municipality will offer concession accord regarding waste incineration, solar systems, production of thermal energy, which will be erected and operated by the private companies.

implementa in ansamblurile noi ANL, terti, blocuri decuplate de la termoficare, centru istoric, noile ansambluri aflate in constructie, dupa “modelul britanic”: municipalitatea ofera acord de concesiune privind incinerarea deseurilor, panouri solare, producerea de energie termica, care vor fi construite si exploatate de companii private.

Answer 2.1.8:

The proposal will result in huge differences in tariff from area to area.

In current areas continuously supplied from natural gas sources the baseline tariff will be about 30 EUR/GJ in 2009 increasing to above 50 EUR/GJ in 2020 as the natural gas price increases and energy/environmental taxes are introduced.

In areas supplied from waste-to-energy facilities the baseline tariff will be about 10 EUR/GJ in 2009 and this tariff can be maintained in 2020.

We recommend in the Strategy Report that the benefit of waste-to-energy and solar energy shall be for everybody.

Raspuns 2.1.8:

Propunerea va genera diferente de tarif imense de la o zona la zona.

In ariile in care, in prezent, furnizarea caldurii se bazeaza pe surse cu gaze naturale, tariful de baza va creste de la aproximativ 30 Euro/GJ cat este in 2009. la aproape 50 Euro/GJ, in 2020, ca urmare a cresterii pretului la gazele naturale si introducerii taxelor pe mediu/energie.

In ariile in care furnizarea se va sigura din facilitatile de incinerare, tariful de baza este estimat in preturi la nivelul anului 2009 de 10 Euro/GJ, acest tarif putandu-se mentine constant chiar si in 2020.

Beneficiile din facilitatile de incinerare a deseurilor si din energia solara ar trebuie sa fie disponibile pentru fiecare, aceasta recomandare se regaseste in Raportul privind Strategia.

Observation 2.1.9:

The price of the electricity produced by Electrocentrale Bucuresti is 20-30% less than the national average price, due to the fact that RADET ensure proper condition for an efficient cogeneration mode. Also, the price for electricity local produced could be taken by Bucharest Municipality from distribution and may be lower due to the savings on transmission lines.

Observatia 2.1.9:

Energia electrica produsa de SEB are pretul cu 20-30% mai mic decat pretul mediu pe tara si datorita faptului ca RADET asigura conditii energetice corespunzatoare functionarii eficiente in cogenerare. De asemenea, pretul energiei electrice produse local si preluata de Municipiul Bucuresti ar fi mai mic deoarece nu mai intervin pierderile de transport a energiei electrice.

Answer 2.1.9:

The overall goal of the EU-directives regarding opening of the electricity market is that the price, in an ideal situation, should be the same from Lapland in north to Sicily in South and from Ireland in West to Romania in East. This is obtained by ensuring that electricity will flow from areas with low production costs to areas with high production costs levelling the differences in tariffs.

National, regional and municipal borders are not relevant in this respect.

Raspuns 2.1.9:

Obiectivul general al Directivelor Europene, in ceea ce priveste deschiderea pietei de energie electrica, in conditii ideale, este acela ca pretul electricitatii ar trebui sa fie acelasi in toata Europa din Laponia, in nord, pana in Sicilia, in sud si din Irlanda, in vest, pana in Romania, in est. Acest lucru poate fi posibil ca urmare a faptului ca electricitatea se poate transporta din zonele, in care costurile de productie sunt mici, catre zone in care costul de productie este ridicat, niveland astfel diferentele din tarif.

Observation 2.1.10:

Regarding the considerations on RADET organisation included in “Report 3”, we mention the followings:

- a) Where proper location in terms of enough space, RADET has implemented heating modules at level of blocks (over 250 pieces), including new

Observatia 2.1.10:

In ceea ce priveste observatiile referitoare la RADET din “Raportul 3”, mentionam urmatoarele:

- a) Acolo unde exista spatii corespunzatoare, RADET a implementat module termice (peste 250 bucati), inclusiv la imobilele noi racordate.
- b) Tariful energiei termice livrat de RADET

- connected buildings.
- b) The RADET tariff included in his structure the losses of thermal energy between production sources and thermal substations, being unique in Romania in this respect.
- c) During the period when the technical condition are favourable, the big and small CHP are pooled operated (SUD + Titan + Pipera, Grozavesti + Grivita + CTZ CPL)
- d) There are concerns, studies, projects for: small cogeneration, conversion of Local HoB into small CHP (Bucurestii Noi area, Barbu Vacarescu, Floreasca, Ferentari area, etc)
- e) Following the City Council approval of financing , RADET has performed the followings main projects:
- Integral replacing of heat exchangers for heating and htw
 - Installation in all substations softening plants for treatment of additional heat carrier
 - For the very first time the quality of water in the primary and secondary systems reached the level requested by norms
 - Until the end of the year, in the 459 substations will be installed pumps with variable speed (currently in 304 substation are already installed)
 - In 229 substation is installed the control system and in the last quarter of 2009 in other 138 substation will be installed the control system
 - The thermal isolation is replaced on 102 km primary system and 339 km secondary system, with modern solution with $\lambda \leq 0.027$ W/mpK

Answer 2.1.10:

- a) We understand that only 250 blocks of 8.658 blocks has "hot tap water and heating on demand".
- b) The tariff is unique not only in Romania but worldwide. No other district heating system in the EU has so high transmission costs, pumping costs and water losses etc as RADET.
- c) Changing the supply area between summer load and winter load is not the technical-economical load dispatch with pooled operation we talk about.
- d) With projects already prepared it should easy the implementation of the decentralised production programme proposed in the Energy Strategy.
- e) No norms allow the black water seen in the distribution systems when they were filled at the start of the heating season 2009/2010.

The list of progress is impressive. What the

Bucuresti este singurul din tara care include pierderile de energiei termica de la surse la PT de cartier.

- c) In perioadele in care conditiile tehnice permit, CET-urile mari functioneaza in "inel" cu CET-urile mici, (SUD + Titan + Pipera, Grozavesti + Grivita + CTZ CPL)
- d) Exista preocupari, studii, proiecte pentru: cogenerare de mica putere, transformarea CT in PT (zona Bucurestii Noi, Barbu Vacarescu, Floreasca, zona Ferentari, etc)
- e) Pe baza aprobarii si a finantarii CGMB, la RADET Bucuresti s-au realizat urmatoarele lucrari principale:
- Inlocuirea integrala a schimbatoarelor de incalzire si apa calda de consum
 - Dotarea PT cu module de tratare a apei de adaos
 - Pentru prima data dupa 1990, calitatea apei din circuitele primare si secundare este conform normativelor
 - Pana la sfarsitul anului, 459 PT vor avea pompe cu turatie variabila (la 304 PT pompele sunt in functiune)
 - 229 PT sunt automatizate, iar la 138 PT automatizarile vor fi puse in functiune in trim IV 2009.
 - 102 km conducte retea primara si 339 km retea secundara sunt inlocuite cu izolatii moderne $\lambda \leq 0.027$ W/mpK

Raspuns 2.1.10:

- a) Noi intelegem ca numai 250 de blocuri din cele 8,658 existente, au "caldura si apa calda de consum la cerere".
- b) Structura de tarif este aceeaasi, nu numai in Romania, ci in intreaga lume. Nici un alt sistem de incalzire centralizata din UE nu are costuri de transport, costuri de pompare si pierderi de agent termic, etc. atat de mari ca cele ale RADET.
- c) Schimbarea zonelor de furnizare in situatia de vara, fata de cea de iarna nu reprezinta descrierea functionarii unui dispecer tehnico-economic, cu sursele "injectand in inel", asa cum a fost inclusa in Strategia Energetica.
- d) Nici un normativ nu permite o asemenea calitate a apei pentru agentul termic, asa cum este aceasta "apa neagra" din sistemul de distributie, folosita pentru incarcarea sistemului la inceputul

consumers are waiting for is a reduction in tariffs (reflection to the savings obtained) and improved supply conditions (heat and hot tap water on demand).

The main problem in this respect is that no savings and other benefits are obtained. RADET is not even able to repay EIB/CEB and EBRD loan but must depend on the Municipality to perform the loan services.

sezonului de incalzire 2009/2010.

Lista progreselor este impresionanta. Ceea ce asteapta consumatorii de fapt sunt: o reducere a tarifului (reflectarea economiilor ca urmare a investitiilor facute) si imbunatatirea conditiilor de furnizare (caldura si apa calda la cerere).

Cea mai mare problema in acest sens este faptul ca nu se obtin nici economii nici alte beneficii din investitiile facute. RADET nu este capabil financiar sa returneze creditele BEI/BDCE si BERD si trebuie sa depinda de Primarie pentru asigurarea cheltuielilor pentru returnarea creditelor.

Observation 2.1.11:

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

Observatia 2.1.11:

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, retehnologizarea 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.

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 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.

- *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 izolatie este dubla (reducerea pierderilor cu peste 12-15% va permite rambursarea fara probleme a creditelor); 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 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 exploatate 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:*

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

- *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.*

RADET trebuie sa inteleaga ca distributia

- *Inlocuirea instalatiilor interioare din blocuri concomitent cu asigurarea alimentarii separate a apartamentelor, inclusiv trigenerarea.*

RADET trebuie sa inteleaga ca distributia

RADET trebuie sa inteleaga ca distributia

- 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.

Answer 2.1.11:

Reply is included above with *Italic writing*

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.

Raspuns 2.1.11:

Raspunsurile la acest punct sunt incluse mai sus *in italic*