



Project Armenia

This project first proposed to the Armenian Government to build a Mega Development Project in the Southern border with Iran.

Please watch this video first:

<https://www.youtube.com/watch?v=cRPvBMWzQaA&t=71s>

Good progress was made at the beginning showing pictures of few following letters. But a revolution and after that war made the project forgotten





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THE REPUBLIC OF ARMENIA
MINISTRY
OF TERRITORIAL
ADMINISTRATION AND
INFRASTRUCTURE

ՆԱԽԱՐԱՐՈՒԹՅԱՆ
ԴԵՍՒՅՄԱՆ

Հիմնական տեղեկություններ համաձայնումի համար 3

Կարգի թիվը, Հանրային կոդ

ՀԵ 2019 թ.

№ 03/17/6015-19



To Sohrab Chamankhyan
Email: ssohrab@CHAMCO.net

Dear Mr. Sohrab Chamankhyan,

Thank you for your letter.

Regarding the issue of assisting implementation of projects presented to the RA Prime Minister by you we inform that the Government of the Republic of Armenia highly appreciates the readiness of your company to participate in Armenia's economic life.

At the same time, in respect to your proposal to turn Yerevan waste into electricity it should be noted that there is no technical and financial-economic information in your proposal. Besides, at present, Yerevan Solid Waste project is being implemented, within the framework of which it is envisaged to build a new sanitary landfill adjacent to Nubarashen landfill and close the existing landfills in Nubarashen and Ajapnyak. The landfill is foreseen for the disposal of 330,000 tons of waste generated annually in Yerevan.

You also suggest building the "Spirit of Armenia" Center dedicated to the art and culture of Armenia and Iran. It should be noted that there is no project proposal for the

center construction, in particular, the financial and economic feasibility of the project, the timeline of the project implementation, the size of investments, the number of jobs to be created, the requirements for space needed to carry out the activities, etc.

Your letter also suggests formal approval for the implementation of the abovementioned projects.

Based on the above, we suggest:

- present a project proposal for the construction of waste-to-energy plant in Yerevan, including technical and financial-economic information;
- consider various (regions) of Armenia for construction of waste-to-energy plants;
- present project proposal for building the "Spirit of Armenia" Center;
- present your organization's experience in implementing projects similar to proposed ones;
- clarify what is the formal approval by the Government of the Republic of Armenia, in particular what obligations are undertaken by the Republic of Armenia by providing this document.

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Kind regards,
Signed by TERRITORY/ՎԿԱԿ ՍՈՏՐՅԱՆ

Vaché Tartaryan

Օրոշ Ջոնսոն
Department of Territorial Infrastructure Development
Tel. +374 10 511 340

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THE REPUBLIC OF ARMENIA
MINISTRY
OF TERRITORIAL
ADMINISTRATION AND
INFRASTRUCTURE

ՆԱԽԱՐԱՐԻ ՏԵՂԱԿԱԼ
DEPUTY MINISTER

Երևան-0010, Հանրապետության կր., Կառավարական ստան 3

Yerevan-0010, Republic sq.

« 04 » 07 2019 թ.

N. 03/11/7135-19

To Sohrab ChamanAra
Email: sohrab@CHAMCO.net


Dear Mr. Sohrab ChamanAra,

Thank you for your answer.

The proposed ideas are very interesting.

However, we'd like to receive more information about practical aspects of proposed projects such as technical and financial-economic information. That will let us form an opinion about projects and state our level of interest in their implementation.

7/4/2019

X 
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Kind regards,

Signed by: TERTERYAN VACHE 1201620635





Sohrab ChamanAra

315 Wilkins Dr. Des Plaines, IL 60016

Tel: (847) 390 6020 Email: sohrab@CHAMCO.net

Website: www.projectarmenia.us

H.E. Prime Minister, Nikol Pashinyan
Yerevan Armenia

December 27, 2018

Your Excellency:

President Kennedy said: "I am certain that after the dust of centuries has passed over our cities, we, too, will be remembered not for victories or defeats in battles or in politics, but for our contributions to the human spirit."

Armen Saginian and I, for many years, have had a dream to make Armenia, with her limited land and population, become the heavy-weight of the Middle East by showing the Spirit of Armenia at her southern border with Iran.

Iran owes the survival of her music and art to the efforts of Iranian Armenians and Jews throughout her fourteen centuries of sociopolitical turbulence.

We, the advocates of this endeavor, are experienced professionals who are much interested in helping the younger generation to learn about and appreciate the heritage that they are being entrusted with.

We would like to see it become functional for the spring of 2019, in its primitive stage, to be completed into a major performance center in short time thereafter.

We propose to build "The Spirit of Armenia" at 38 deg 53' 17" North, 46 deg 29' 05" East, to celebrate Art and Culture of Armenia and Iran.

We envision it to be not only an art center, but also a center where three oldest and related cultures of five millenniums can be presented to their posterity.

We propose to accomplish this task to make sure that our posterity does not forget who they are, and that world does not pass us by as too small to worry about.

We need your formal approval to build this tree-national Art and Cultural Center, to be followed by its complementary and commemorative structure later on. With that permit, we will summon the people of means and bring in the financing needed to start the work and have the first performance in the spring of 2019.

Sincerely
Sohrab ChamanAra

CC: Armen Saginian
420 N. Louise St. #21 Glendale CA 91206
Tel: (818) 409 0873 Email: Armen@CHAMCO.net



Project Armenia

Shahen Mananian
201 North Brand Blvd, Suite 200
Glendale, CA 91203 U.S.A.
Email: shahen.sm@gmail.com
Tel: +1 818 856 1492

To,
Honorable Deputy Prime Minister Tigran Avinyan (Tigran.avinyan@gov.am)
Honorable Minister of Economy Mane Adamian (mana.adamian@gov.am)
Honorable Minister of Diaspora Babken Der Grigorian (babken@mindiaspora.am)
Assistant to Deputy Prime Minister Viktorya Aydinyan (viktorya.aydinyan@gov.am)

July 21, 2018

Dear Tigran Avinyan,

Enclosed here is proposal you requested during Business Armenia (BA) visit in Los Angeles U.S.A.
Titled:

Municipal Solid Waste Conversion to Energy
Financial Report Yerevan Municipality 10MW and Compost

I wish to congratulate the peaceful revolution and also take opportunity to thank you, together with member of your team for giving us chance to be part of this grade movement.

We at Our Company are pleased to have the chance to submit a proposal to help Cities Whether it's recycling unwanted material, or using less power, there's a lot you can do to help keep your environment clean. Please be at liberty to review the proposal and highlight any necessary subjects, I will address those to my colleagues. You can always get in touch with me if there is need for clarification or additional information.

I hope we build a strong relationship in the future.

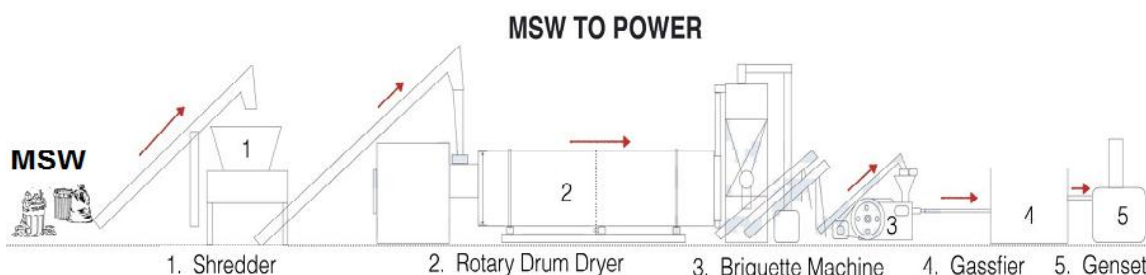
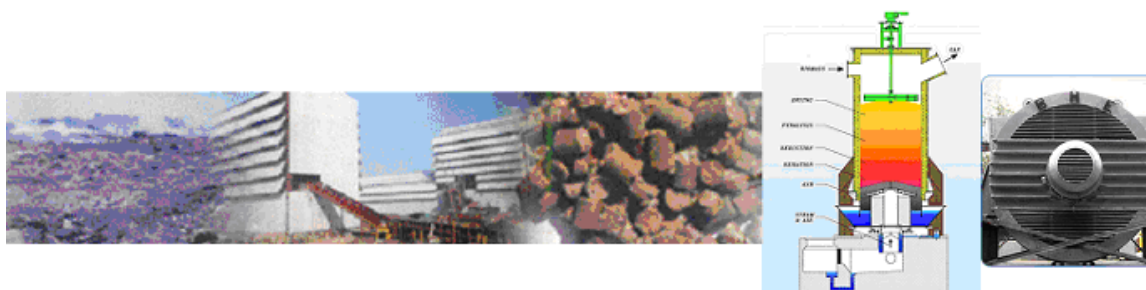
Sincerely,

Shahen Mananian
Project Armenia Development Director

Municipal Solid Waste Conversion to Energy By Chamco Inc.

Shahen Mananian
Project Armenia Development Director
201 North Brand Blvd, Suite 200
Glendale, CA 91203 U.S.A.
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For kind attention:
His Excellency Prime Minister
Nikol Pashinyan
Yerevan Armenia

Proposal To

Honorable Deputy Prime Minister Tigran Avinyan (Tigran.avinyan@gov.am)
Honorable Minister of Economy Mane Adamian (mana.adamian@gov.am)
Honorable Minister of Diaspora Babken Der Grigorian (babken@mindiaspora.am)
Assistant to Deputy Prime Minister Viktorya Aydinyan (viktorya.aydinyan@gov.am)

The MSW / E process is done in three stages:

(1)

**Sorting, drying, mixing, crushing, and extruding,
to make **Briquette****

(2)

Gasification

**Thermal cracking of fuel (briquettes) at a high
temperature of 1050 to 1100 degree Celsius in the
minimal presence of Oxygen to produce
Synthesis Gas (**SynGas**)**

(3)

Electric Generation

**Injecting SynGas directly into gas engine
generator, which has been modified exclusively
by us to work with syngas to produce **Electricity****

Introduction:

Production of the electricity from Municipal Solid Waste (MSW) is an environmental project and most profitable one in a long run. More expensive than gas and coal power plant, but due to the negative cost of fuel, return of investment is shorter.

Armenia with a population of 3 million produces around 2,400 Tons of MSW per day, which could fuel at least 60 MW of power.

the City of Yerevan produces 1000 Tons of Municipal Solid waste per day, which can be fuel for a 25 MW electric plant

We propose to start with a 1 MW Power Plant.

It is not easy to finance 25 MW, let alone if we add all other wastes such as used tire, wood wastes and waste coming from other cities.

To alleviate this problem, we suggest this “Mega Project” to be executed in different phases:

Phase I, 1 MW plant.

Phase II, 25 MW plant.

Phase III, 60 MW plant.

Reason for this plan is to use 1 MW plant as a show case and collateral to obtain financing for 25 MW plant and if willing to go further, financing 60 MW will be an easy task.

Used Tire could also be added to the garbage for either gasification or producing fuel, to stop burning tire and damaging environment more than dumping.

At Phase II Solar Power could be considered to enhance this environmental project.

At Phase II Biogas production from sewer and animal waste could start when our manufacturing facility is operational at Armenia.

Manufacturing Facility will start at Phase I so that we could manufacture and assemble 70% of the project at Phase II and Phase III in Armenia.

Project Cost for Phase II:

The total cost of the Sorting and Briquette making facilities, Gasification and Power Plants including; survey, feasibility study and planning, engineering, procurement, contracting, test, commission and training for 25 MW out put, **Turnkey**, is approximately \$125,000,000.

That is \$5,000,000 (five million USD) per Mega Watt.

Project Income:

A – “Power Purchase Agreement” (PPA) for electricity, which the national grid pays to the owner of the plant. We will use an average 15 cents per kilowatt hour (KwH). This is derived from 10 Cent for Domestic and 22 Cent for Industrial use.

Assume that the PPA for 25 MW of electrical power generation at a fixed price is \$0.15 per KWH.

Sale of electricity =

$25 \text{ MW (net power generation)} \times 1000 \times 24 \text{ (hours)} \times 365 \text{ (days)} \times \$0.15 \times 0.85 \text{ (Efficiency Factor)} =$
\$27,922,500 gross income from power generation annually.

B - Tipping Fee: Municipalities pay the plant operators/owners a tipping fee for each Ton that they receive and handle per day. The average tipping fee is around \$10 / T:

Tipping Fee = $1000 \text{ (T/D)} \times \$20 \text{ (per Ton)} \times 365 \text{ Days} = \$7,300,000$ Annually.

C - **Operation & Labor Cost.** For this project of 25 MW power plants and RDF plant, a work force of about 20 technical and 50 non-technical workers are estimated.

Assuming \$80,000 per technical and \$40,000 per non-technical works, the approximate labor costs will be: $20 \times \$80,000 + 50 \times \$40,000 = \$5,200,000$

D – Spare and Maintenance approximately \$1,000,000 per year.

Summary:

- Assume 3 years Return Of Investment (ROI)
- | | |
|---------------------------|----------------------|
| <u>Cost of facilities</u> | <u>\$125,000,000</u> |
|---------------------------|----------------------|
- Income from PPA \$27,922,500
- Income from tipping fee \$8,760,000 = \$0 for City of Yerevan
- Labor costs \$5,200,000
- Maintenance costs \$1,000,000

- $\text{ROI} = 125,000,000 / (27,922,500 + 0.0 - 5,200,000 - 1,000,000)$
- ~ 6 years with zero emission and huge Carbon Credit

Note:

Return of investment for coal power plants is more than 20 years.

Return of investment for gas power plant is around 10 years.

Project Cost for Phase I:

The total cost of the Sorting and Briquette making facilities, Gasification and Power Plants including; survey, feasibility study and planning, engineering, procurement, contracting, test, commission and training and also setting up a manufacturing facility is \$7,000,000 (seven million USD).

Special offer for City of Yerevan, Armenia:

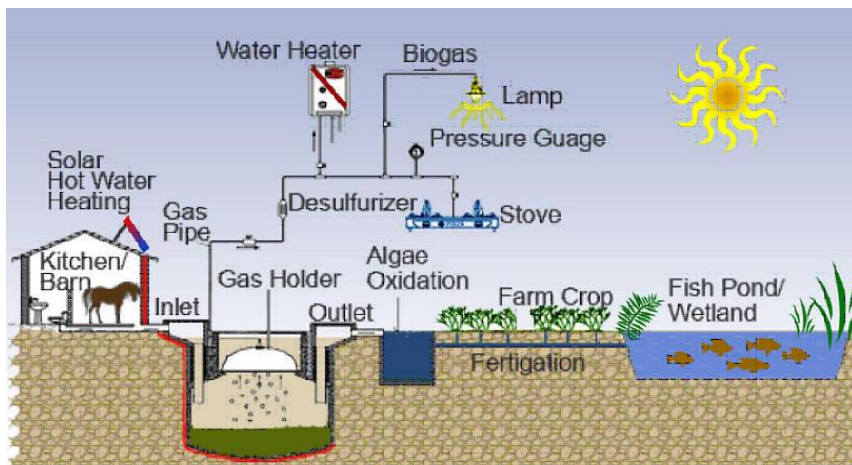
CHAMCO proposes to build this plant as Pilot Plant of the 25 MW contract with following payment conditions: \$3,500,000 payment and \$3,500,000 promissory notes to be cashed when expansion financing is obtained.

Note:

If after building the Pilot Plant, Phase I, the Government of Armenia decides to stop the project, the \$3.5 million should be paid immediately. Furthermore, if the Government of Armenia decides to award the expansion of the project to other companies, \$5 million has to be paid to CHAMCO.

Biogas is a fuel gas made from sewer and biomass such as food waste, grass and straw etc. during the anaerobic fermentation process.

Biogas contains about 55% - 70% methane (CH₄), and some carbon dioxide, some water, some hydrogen some carbon monoxide and some hydrogen sulfide (H₂S).



The heat value of biogas is 5142 Kcal/m³

Conditions needed for biogas production are:

- 1- Strict absence of Oxygen.
- 2- Temperature between 8 – 65 Deg. C. Higher the temperature the more active methane bacteria, and the higher biogas production.
- 3- Neutral or slightly alkaline environment, a pH value between 6.8 and 7.5

For a 10 m³ biogas plant to keep a 5 m³/d biogas production, 150 kg cow dung or 110 kg pig dung is needed daily.

The liquid from biogas plant can be recycled.

Biogas residue is good organic fertilizers.

Raw material needed to produce 1 cubic meter biogas:

Pig Manure:	4 kg dry	=	22.23 kg fresh
Cow Manure:	5.26 kg dry	=	30.96 kg fresh
Chicken Manure	4 kg dry	=	13.34 kg fresh
Human Manure	3.33 kg dry	=	16.67 kg fresh