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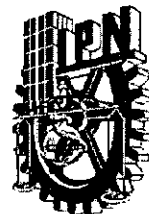
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## FINAL REPORT

### PROMOTION AND IMPLEMENTATION OF "CLOSING THE LOOPS" COOPERATION AND BUSINESS MODELS IN THE CHEMICAL INDUSTRY

#### CHEMICAL LEASING

Project No. UE/INT/04/155

June, 2007

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## 1. INTRODUCTION

The CMPL has had as permanent activity the dissemination of the concept of Chemical Leasing, doing this through different meetings with industrialists (users and manufacturing of chemical products), attendance to forums as the "XX National congress of electroplating", and the development of the "Third Forum of Chemical Leasing Mexico", where representatives of Government and industrialists interested in the program attended; meetings with the Environmental Ministry of the Government of the Federal District, with the purpose of establish mechanisms that allow the implantation of the project in diverse companies of Mexico, looking for a team work between the Government and the CMPL.

The present report includes the development of the project Chemical Leasing during the period January to June of 2007; this experience has been in the electroplating, sugar cane and petrochemical sectors.

The connection between CRODEL and MARDI, allowed to gain experience to the CMPL in the development of the project. The benefits obtained were the reduction of the consumption of Nickel (22%) in the electrodeposits process; as well as to establish an indicator of negotiation of payment per Ampere-hour consumed in the work tank. This indicator allowed to connect the chemical product consumption (brighteners) and the Productivity of CRODEL. The implantation of the project is supported in a technical report from the CMPL, as well as a signed commercial contract between CRODEL and MARDI payment \$0.14USD/10 ampere-hour.

Focusing on Sugar Mills, the work has demanded the development of different meetings from dissemination of the concept of Chemical Leasing with a considerable number of Sugar Mills, all of them memberships to the FEESA-SAGARPA Mexico; as well as diverse suppliers of lubricants, chemical agents and, metallic blades.

In the respect to Petrochemical PEMEX, meetings of work with diverse suppliers have settled of: catalysts, peroxide manufacturers (initiators), water treatment (residual and process), reflecting a mutual interest (PEMEX-Suppliers) for the development of the project, in such a way that development process and analysis of the different technical proposals that the different suppliers put under PEMEX and the CMPL considerations.

It is had considered for end of the month of June to have a meeting with diverse industrialists of "Plastic Enterprises National Association (ANIPAC)" with the objective to involve to the members of ANIPAC in the implementation of the Chemical Leasing.

In other hand, Manufacturing activated carbon "CLARIMEX" and chemical products "EUROCHEM" companies have been integrated to the project, which handle a portfolio of

captive clients, same that we will look to integrate to the implementation of the project with future commercial connections User Supplier that remain in the time.

The report mentioned experiences obtained (positive and negative) during the development and implementation of the project for each commercial team.

Finally future tasks and strategies appear to continue the development of Chemical Leasing project in Mexico; as well as conclusions of the period that has finished.

## **OBJECTIVES**

To implement the scheme of Chemical Leasing in the companies involved (users and suppliers), to establish an agreement of collaboration between the CMPL and the involved partners, and to further development of a work scheme focused on services and payments for productivity.

## **2. STATUS OF CHEMICAL LEASING PROJECT**

### **2.1. SUGAR MILLS**

The development of the project in the sugar mills, demanded a series of recognition visits to mills like: Cuatotolapan, San Gabriel, Potrero, El Modelo, San Cristóbal, San Pedro, La Providencia, San Miguelito; all of them belonged to the bottom of "Empresas Expropiadas S.A. (FEESA)".

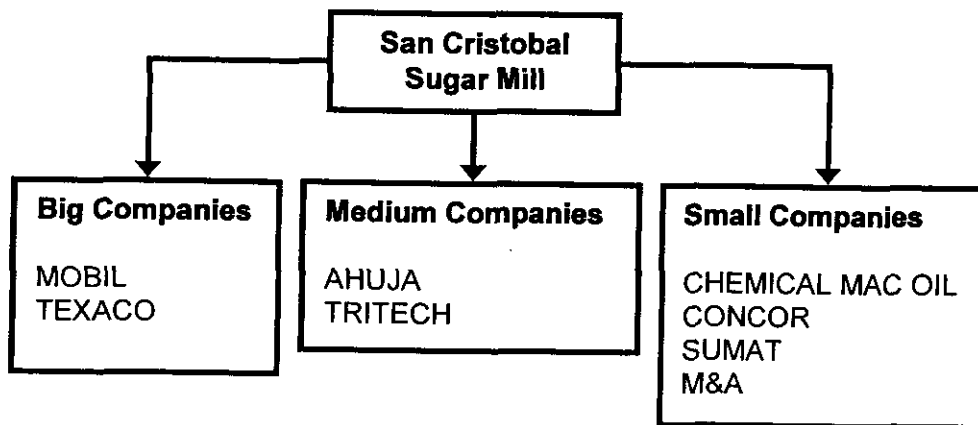
The products with potential of application of the Chemical Leasing are greases and oils, blades, chemical agents (floculants, bactericidal, etc.) is being studied.

For this period (February - June of 2007) the team worked with San Cristóbal Sugar Mill, in the implementation of lubricants applied in the mill area, handling an integral service from the supplier and establishing an indicator of payment by ton of sugar cane milled.

In this sense, several suppliers of lubricants were invited for they put under consideration a technical proposal referring to the implementation of the Chemical Leasing, being evaluated in a process of Licitation with the support of the CMPL.

It is important to mention that transnational companies appeared (big companies) in the Licitation as: Exxon-Mobil Oil, Chevron Texaco; medium companies as Grupo Ahuja, Trittech-Castrol; and small companies as Lubricant Chemical Mac Oil, Grupo CONCOR, M&A and, SUMAT. The reasons for disqualification can be basic elements like lack of companies, until breach of the technical requirements (properties physic-chemistries) of supplied products.

The Figure 1 showed the possible commercial connections that can be developed between San Cristóbal Sugar Mill (big company) and the suppliers.



**Figure 1.** Possible commercial connections between the Sugar Mill and Suppliers.

The proposals contemplated diverse points in the implantation of the Chemical Leasing with the purpose of obtaining the following things:

- Reduction in the cooling water consumption;
- Smaller wearing down in the equipment by friction;
- Reduction in the energy consumption;
- Reduction in the number and time of repair employees;
- To increase the process efficiency;
- Technical support;
- Environmental friendly chemical products.

The company that won the Licitación was Chemical Mac Oil, S.A. of C.V, with product (oil) "**SCHUTZ BIO TECH SM 3000**"; the business index was \$0.22 Mexican Pesos by ton of sugar cane milled (\$0.03USD/ton milled). In the second progress reports we attached a copy of the technical proposal accepted by the San Cristóbal Sugar mill, copy of the collaboration agreement and copy of the commercial contract with the payment by productivity.

In the development of the implantation of the project between Chemical Mac Oil - San Cristóbal, diverse problems appeared like change of the General Manager of the Sugar Mill, application of oil instead of grease in the mill area, wear away excessive in the equipment of mills (Bearings and disk dent mills), heating in the bodies of the equipment and, consumption of lubricant higher than calculated for the supplier (see Table 1).

**Table 1.** Comparative of consumption of lubricants in Bearings and Disk Dent mills between proposed by Chemical Mac Oil and the real consumption.

EQUIPMENT	PROPOSED CONSUMPTION	REAL CONSUMPTION	DIFFERENCE
BEARINGS	3.8 g/ton	5.9 g/ton	+ 2.1 g/ton
DISK DENT	1.5 g/ton	4.6 g/ton	+ 3.1 g/ton

The difference in the consumption of lubricants, was covered by the supplier, because it was a clause of the implantation proposal of the contract signed between the interested parts.

The positive and negative experiences learned in the process of implantation of the Chemical Leasing between San Cristóbal and Chemical Mac Oil are show (big company-small company).

### Positive Experiences

- 1) A proposal of payment by productivity under an integral service;
- 2) The harvesting of the lubricant spent from the supplier, has been considered;
- 3) To use biodegradable lubricants and food degree, has been considered;
- 4) Competition between suppliers in order that each one submit its better proposal of work, which benefits to the sugar mill in a better service and quality of the product,
- 5) Structure of collaboration agreements supported in a technical proposal;
- 6) The contract established the responsibility from the supplier for the care of the equipment of the Mill settles down, to maintain the quality of the supplied product (lubricant) and, to maintain or to increase the productivity without to decrease its quality.

### Negative Experiences

- 1) The supplier is a small company and relatively of low experience in the sector, and it ignored details of the state of the equipment at the time of entering its lubricant products;
- 2) It lacked more experience in the technical support of the supplier's personnel;
- 3) The consumptions of lubricants were exceeded;
- 4) As much the personnel of the Sugar Mill as the supplier accepted the use of oil in the mills area and they didn't use grease like in previous Work periods (zafra);
- 5) When not using grease, the properties of adhesion to the equipment and resistance to the washing by water (the mills are an area with much water) decrease with the lubricating oil, which generates a considerable increase in the friction and damages in the equipment of mills;
- 6) The cooling water consumption was increased, because a deficient lubrication in the machinery bodies increased their temperature and an external cooling of the equipment be came necessary with water a higher use of water;
- 7) It was increased the number and repair time, which generated a fall in the Sugar Mill production.

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**Recommendations**

- 1) Analysis of the state of the equipment in the mills area once finalized the work period (zafra);
- 2) Repair lubrication lines (pipes);
- 3) Repair the mill area equipment (machinery);
- 4) To fit the terms of the Licitación in order that the suppliers adopt the implantation of the Chemical Leasing; in the understood to fulfill: Payment by productivity, service quality, product quality, technical support and, integrity of the process equipment;
- 5) The suppliers should to visit with personnel of the Sugar Mill and the CMPL the process areas where their products will be applied, in order that they see the conditions in which the lubricants will operate;
- 6) The sugar Mill has 2 tandems of mills, is recommended that two different suppliers enter (those for the propose to have the best technical proposals) in order that they operate his products and to see the real efficiency of these in real conditions. This will allow that both suppliers make an effort to be the best one, and in the end the Sugar Mill chooses the one that offers a better performance;
- 7) To look for the certification by TÜV for the implantation of the Chemical Leasing;
- 8) It is recommended use greases in the mill area, best if use biodegradable or food degree.

It is important to indicate that the San Cristóbal Sugar Mill continues interested in the implantation of the Chemical Leasing, of such way, that the entrance of potential suppliers for the following zafra will be prepared, having activities of selection with support of the CMPL in the period of repair of the Mill (July to November 2007).

**2.2. PETROCHEMICAL INDUSTRY (PEMEX)**

Petrochemical PEMEX has shown interest in the implantation of the Chemical Leasing in the plant "Cangrejera". For this reason as much PEMEX as the CMPL have had diverse talks with chemical agent suppliers for Petrochemical. These meetings have turned around the dissemination of the project, as well as specific meetings (like negotiation tables) where they have discussed the requirements of PEMEX and some proposals of work made for some of the suppliers.

We have identified molecular meshes, catalytic, clays and activated carbon, within susceptible products for the development of the project.

Relation with diverse companies (big companies) has been had, and the companies that at the moment have shown interest are ARKEMA Catalytic Initiators, OXITENO (Canamex Chemical), Johnson Matthey Catalyst and, NALCO of Mexico.

Companies ARKEMA and OXITENO discussed their work proposals with PEMEX and the CMPL in presence of the PhD. Reinhard Joas. PEMEX is interested in both proposals and requires some adjustments to be presented to the group of directors of Petrochemical.



It is possible to indicate, that even though both PEMEX is interesting, no one fulfills the 100% with the requirements of the Chemical Leasing, in the sense that they don't offer an indicator of specific payment by specific productivity; nevertheless, both raise benefits like: increase in the efficiency of the process, suitable chemical agent handling, reduction in the environmental and work risks, technical support, regeneration of catalysts, precious metal recovery, among others.

Although the proposals of these suppliers do not contemplate an indicator of payment by productivity, the PhD. Reinhard Joas mentioned that they are within the neighborhood of the Chemical Leasing, since they contemplate economic and environmental benefits; fact by which it was commented in a meeting held in the PEMEX facilities (May 15 of 2007) these could be considered acceptable proposals for the project Chemical Leasing, same that will be discussed to the interior of ONUDI and TÜV certification organism.

NALCO (it is in analysis process his proposal), a scheme considers that if it fulfills to a 100% the requirements of the Chemical Leasing, placing series of economic and environmental benefits, when implanting a payment by cubic meter of treated water (process and waste water).

It is possible to indicate that even though the proposals of the suppliers are accepted by PEMEX personnel, the time for the implantation will depend of the administrative rules of the Petrochemical (government enterprises). The Licitation points will look for the accepted technical proposals and an agreement of User-Supplier collaboration.

Another point to consider is the handling of catalysts spent in Mexico, since by Mexican laws, is complex its liberation for regeneration and metal recovery. In this way the PhD. Ramon Montiel (Technical Management Catalytic), mentioned that PEMEX is in the understood that the suppliers of catalysts give an integral service that involves the handling of the spent catalysts; fact by which PEMEX is structuring a program denominated "Integral Administration of Catalysts", where they request the support of the PhD. Reinhard Joas and the CMPL to look for this program TÜV certification.

Derivative of previous, the PhD. Reinhard Joas was committed to send to CMPL and PEMEX a strategy for the handling of catalysts under the scheme of Chemical Leasing and its future certification.

We can consider the development of the Chemical Leasing in Petrochemical PEMEX with high potential, same that could be making specific the implantation of some of the proposals of the suppliers in the course of the second semester of the 2007.

The next are some found positive and negative experiences in the process of implantation of the Chemical Leasing with Petrochemical PEMEX appear.

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**Positive Experiences**

- 1) To work with big companies that it will allow to obtain implantation of the model in fast way, with the capacity to obtain high economic and environmental benefits.
- 2) As much the user as the suppliers knows to detail their technical requirements in the handling of chemical products.
- 3) The structure of the proposals has demanded a high detail in the analysis of these, with the purpose of which they are attainable and with low risks in the implantation.
- 4) PEMEX has interest and open mind for the development of the project, of such way, that a reconstruction of the Licitacion points is contemplated.
- 5) Even though all the proposals do not handle an indicator of payment by productivity, PEMEX considers for their interests, having the security suitable that its implantation will obtain high benefits.

**Negative Experiences**

- 1) Even though PEMEX has interest in the project, the speed of acceptance of the suppliers depends on the administrative institutions policies, which can mean a slow period for the implantation.
- 2) Different environmental laws were not considered and from security for the handling of spent catalysts, which can represent a barrier for the implantation of some proposal for the handling of these chemicals products.
- 3) It will have to consider to detail the Law of Acquisitions of Mexico to identify the correct way of the structure of alliances of different companies to give an integral service to PEMEX.
- 4) The high production levels and requirements of chemicals in PEMEX, need the installation of auxiliary equipment (tanks, pumps, etc.) for the provision of its products, this fact demands time of design (engineering detail) and construction of the component, as well as the fulfillment of a series of legal questions to PEMEX.

**Recommendations**

- 1) Work meetings with personnel of PEMEX to fit the procedure of Integral Administration of Catalysts and to obtain the TÜV certification.
- 2) To integrate the suppliers that PEMEX has operating in the provision of catalysts, in order that these suppliers offer an integral service in terms of Chemical Leasing, identifying the potential benefits.
- 3) ONUDI need analyze the proposals submit by PEMEX's suppliers that although absolutely do not fulfill the terms of the Chemical Leasing, the proposals present a technical structure, economic and environmental benefits.

**2.3. ELECTROPLATING**

In previous reports, it was sent the profits of the implantation of the Chemical Leasing between CRODEL and MARDI, according the following document copy: a technical report, agreement of collaboration and a signed commercial contract.

To summary way profit a reduction of 22% in the consumption of nickel (165 kg/year) when doing an adjustment in the chemical composition of the electrolytic bath brought savings of \$10,000 USD/year; allowing to the establishment of an indicator of payment by productivity with the reading of the consumption of ampere-hour in the work tank, being an index from negotiation of \$0.14USD/10 Amper-hour, that correlates the consumption of chemical products (brighteners) and the production of diverse pieces in CRODEL.

When the companies signed the contract, diverse tasks for the evaluation of the implantation of the model settled down (listed in the second progress report), being referring of equipment installation: To install to brighteners to dispenser in the electroplating tank and to buy and install an ampere-hour to put equipment.

Nevertheless, the signature of a contract in terms of Chemical Leasing between CRODEL and MARDI demanded a time and technical consultant by CMPL. The previous thing had to factors like:

- Beginning of the CMPL in the project of Chemical Leasing;
- The two involved companies are small (familiar groups) what brings with himself diverse disadvantages that slow down the implementation process;
- Very heterogeneous production and with fluctuating levels;
- It was the first adjustment of the chemistry of the bath made from the Supplier which demand time for the starting and stabilization of the process;
- When having fluctuating levels of production, the demand of brighteners in the process are not constant; what doubts from the Supplier generated in the sense to consider that User (CRODEL) was developing his own brighteners, which was in loss of confidence between MARDI and CRODEL.

The CMPL obtained the experiences on the implantation of the Chemical Leasing when both involved companies are small. The next are some positive and negative experiences in the process of implantation between CRODEL and MARDI appears.

### **Positive Experiences**

- 1) We had a technical report of the adjustment of the electrolytic bath and the establishment of an indirect measurement (ampere-hour) that allows to correlate the consumption of brighteners and the production in companies with heterogeneous and fluctuating production.
- 2) The scheme of Chemical Leasing implanted in Electroplating, will allow to supply it to the sector and to reproduce it in other plants, being reduced the time of implantation.
- 3) Good economic and environmental benefits were obtained, considering that the project was developed in small companies.

- 4) Data sheets were structured that allow to suitably quantify and to administer the production, power demand in the work tank and addition of chemistries to the process.
- 5) To consider points that at first were not taken care of, in referring within reach of the project and the commitment of the CMPL.
- 6) The experience in this project, allowed that in the following commercial connections a structure in *collaboration agreement of high commitment in the service* from the supplier appeared, as well as the request to the supplier that presents a technical proposal of its service in terms of Chemical Leasing and a work plan for the implantation.

### **Negative Experiences**

- 1) Lack of data sheets of production and consumption of chemical products, which made difficult the information storing.
- 2) The CRODEL's workers refused participate in this new scheme.
- 3) Lack of technical support from MARDI to CRODEL and the CMPL.
- 4) The Supplier did not give a correct training in the use of the chemical products (brighteners), which generated that the operators added product without control.
- 5) Lack of supply experience in the new process, which generated problems for the implementation.
- 6) Very heterogeneous production and with very fluctuating levels.
- 7) Little commitment from the supplier.
- 8) Although the project began like a relation of friendship between the Directors of CRODEL and MARDI, in the course of the project lost the confidence.
- 9) The supplier decided not to make the chemical analyses of the bath, being left the responsibility to the CRODEL operator, this increase work again of pieces not fulfilling the required finished quality.
- 10) Between these small companies, it was in discussion the acquisition of the ampere hour meter and the dispensers of chemistries. Of way so that the Supplier decided not to invest anything in these equipment; and the User considered an abuse and lack of commitment of MARDI when not wanting to acquire the equipment, since with base to the readings of the Ampere-hour measurer its payment would be made.
- 11) The CMPL did not establish the reach and commitment at the beginning of the project with CRODEL and MARDI, invested a too long time, analysis, use of measurement equipment and support of CMPL personal; generating these that the supplier really did not offer an integral service to the user, to consider that the CMPL would make all the work of technical support.

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**Recommendations**

- 1) To identify a new supplier, if its possible the owner of the patent of the new process, with the purpose if he is interested in the scheme of Chemical Leasing and it is possible to be applied in several companies of electroplating; obtaining with this an implantation to the sector with multiple companies and a single supplier.
- 2) To explain clearly the reach of the project, the commitment of the CMPL and the requirements on watch integral and checking from the supplier.
- 3) To accord that the supplier when doing the change in the process, nonsingle offers brighteners, but also nickel in order establishing an indicator of payment by productivity, entering nickel consumption and chemical products by finished pieces.
- 4) To look that the users have a homogenous production and slight fluctuations.
- 5) The commercial connections and the implantation in this sector will have to be faster, in the understood that the single CMPL will have a partial checking of the fulfillment in the agreements established between User-Supplier.

**3. COMPANIES WITH POTENTIAL**

The following companies have been contacted and showed interest in Chemical Leasing, however further partners have not yet been identified:

**3.1. CHEMICAL PRODUCTS**

**EUROCHEM** develops, produces, sells and services more than 300 different products, virtually in all type of industries and institutions.

**EUROCHEM** has 6 commercial divisions, each one specialized in different industrial and institutional segments:

- 1) Dynamics Division: Services the food and beverage industry.
- 2) Textile Hygiene Division: It is focused in the cleaning, hygiening and fabric preservation.
- 3) Institutional Division: Covers the food service industry.
- 4) S.C.P. Division: Structured with general industrial and institutional cleaners.
- 5) Process Division: Products for metal cleaning and surface treatment.
- 6) SWAPP Division: Promotes cooling, boiler and waste water treatment products.

Diverse meetings have been had where the concept of Chemical Leasing has been presented to the sale group and directors of Eurochem, where points settled down like:

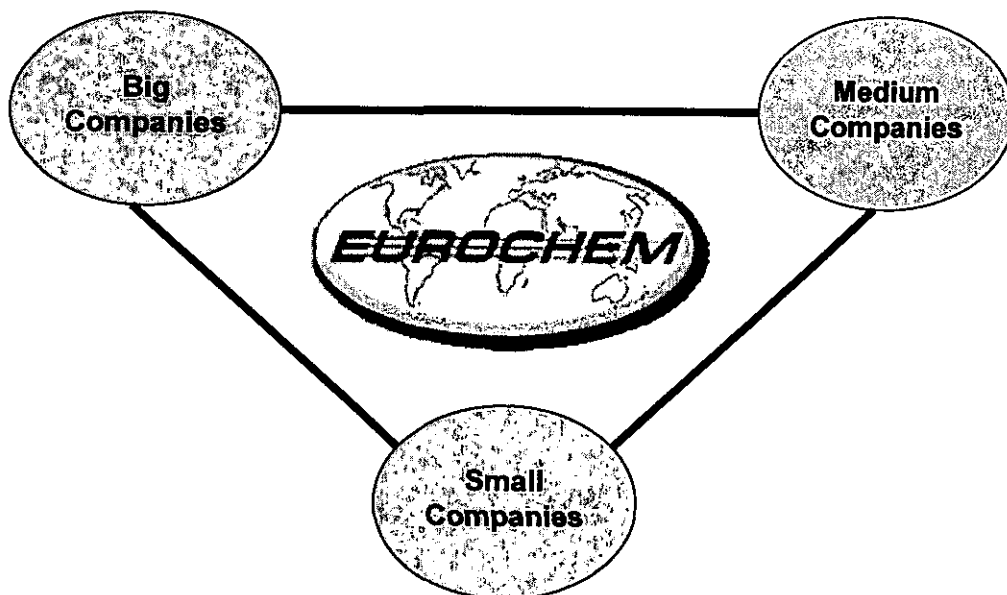
- 1) Strategy to introduce the concept to Eurochem's clients and prospects;
- 2) What is the profile of a company with potential?
- 3) Structure of collaboration agreement;
- 4) CMPL support in the project;
- 5) To elaborate a list of potential clients.

The main idea is to work with them this year in the Chemical Leasing scheme.

At this moment EUROCHEM has a list of clients that considers potential for Chemical, the CMPL is in the phase of structure to detail the work plan and the number of visits to companies per week, being considered an amount of 3 visits per week in companies that are not faraway than 400 km of distance from the CMPL.

Besides, Eurochem has plants in Brazil, so the contemplated possibility is applying the product under the scheme of Chemical Leasing in Centro and South America considering the high amount of sugar mills that operate in those regions.

Eurochem is a big size company with branches in EUA and Brazil, is expected a speed of implantation of the project of high Chemical Leasing, the Figure 2 shows the relations that Eurochem can have with its clients.



**Figure 2.** Possible commercial connections between EUROCHEM and their captive clients

Until the moment it is perceived to Eurochem like a company of high potential for the development of the Chemical Leasing project. The expectancies are: commitment from integral Eurochem, speed in the implantation of the project, work with big companies, proposals with integral services, obtaining economic and environmental benefits, and commercial connections susceptible to certification by TÜV.

### **3.2. CLARIMEX**

The use of activated carbon is a horizontal technology for many sectors in Mexico. In particular wastewater treatment companies, food industry, textile industry, sugar mills, pharmaceutical industry and oil industry are purchasers of activated carbon.

Clarimex produces more than 50 different forms of activated carbon. This company could be convinced about the advantages of Chemical Leasing and now looks for suitable partners for:

- Water Drinkable
- Dechlorinating Water
- Wastewater Treatment
- Sugar Discoloration
- Glucose Discoloration
- Fruit Juice Discoloration
- Wine and Must Discoloration and Deodorization
- Oil Discoloration
- Pharmaceutical Products Discoloration
- MEROX Process
- Air Purification
- Industrial Gas Purification
- Solvent Purification
- Solvent Recovery from Gaseous Currents

The CMPL has considered to operate with captive clients of CLARIMEX which COCA-COLA, PEMEX, among others. As well as to integrate them to ongoing projects in Petrochemical PEMEX and Sugar Mills.

An important potential is anticipated for the Chemical Leasing implantation, considering commercial relationship User-Supplier between big size companies; allowing a good speed of implantation, considering that CLARIMEX is the manufacturing partner, and if has the capacity to reactivate the carbon exhausted in their plant to reuse it with their clients, with this settles down a closed cycle on watch integral, handling an indicator of payment by productivity by cubic meter of current (liquid or gaseous) treated.

### **4. COMPANIES CONTACTED ON THE WORK PERIOD**

1. Cromadora Delgado S.A. de C.V. (CRODEL)
2. Mardi Inc.S.A. de C.V. (MARDI)
3. American Electroplaters and Surface Finishers Society (AMESF)
4. Amaya Aceros S.A. de C.V. (AMAYA)
5. Servicios y Manufacturas en Acero S.A. de C.V.
6. Fideicomiso Ingenio de San Cristóbal 80333 (San Cristóbal)
7. EUROCHEM International S.A. de C.V. (EUROCHEM)
8. Comercializadora y Consultoría CONCOR S.A. de C.V. (CONCOR)
9. Chemical Mac oil S.A. de C.V. (SCHUTZ OIL)
10. Suministros y Materiales Industriales S.A. de C.V. (SUMAT)
11. Grupo Industrial AHUJA S.A. de C.V. (AHUJA)
12. M&A Oil Co. S.A. de C.V. (M&A)

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13. Productos Chevron Texaco México (CHEVRON)
  14. INTERLUB S.A. de C.V. (INTERLUB)
  15. TRITECH de México S.A. de C.V. (CASTROL-TRITECH)
  16. EXXON Mobil S.A. de C.V. (Mobil) - Lubricantes y Filtros S.A. de C.V.
  17. PEMEX Petroquímica (PEMEX-PTQ)
  18. ARKEMA Iniciadores S.A. de C.V. (ARKEMA)
  19. CRITERION Catalyst & Technologies L.P. (CRITERION)
  20. Compañía Internacional de Catalizadores de Impregnación S.A. de C.V. (CICI)
  21. MOXBA Metrex Catalyst (MOXBA)
  22. HOLCHEM México Catalyst (HOLCHEM)
  23. OXITENO Catalyst (OXITENO) – CANAMEX Químicos S.A. de C.V.
  24. Chemtura Corporation (CHEMTURA)
  25. Jonhson Matthey Catalyst (JM-Catalyst)
  26. NALCO de México S.a. de C.V. (NALCO)
  27. Clarimex S.a de C.V. (CLARIMEX)
  28. Asociación Nacional de Industrias del Plástico A.C. (ANIPAC)
  29. Alcoholes y Diluyentes S.A. de C.V. (ADYDSA)
  30. SIEMENS México S.A. de C.V. (SIEMENS)

## 5. FUTURE TASK

1. To continue the dissemination and training events on the Chemical Leasing concept and methodology.
2. To increase the number of potential companies and to develop commercial connections with high speed.
3. To select a new suppliers of lubricants for the Sugar Mill in order that it signs a contract in terms of Chemical Leasing for the next work period.
4. To work in team with EUROCHEM to propose the Chemical Leasing project among its captive clients, and to incorporate its products, mainly the sugar whitening in San Cristóbal Sugar Mill to implant in the next Zafra.
5. To work in equipment with Clarimex for the implantation of the Chemical Leasing in three of its captive clients, and to look for its incorporation in PEMEX and the San Cristóbal sugar Mill.
6. To incorporate the Chemical Leasing model in PEMEX, and to elaborate a contract draft client – supplier, mainly with the OXITENO, ARKEMA y NALCO projects.



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## **6. CONCLUSIONS**

The project shows a good acceptance in the Mexican industry. The target is to work under a sectorial vision, having support points to further penetration into the sugar mill and petrochemical industry sectors.

For the private sector, important alliances with suppliers of lubricants and chemical products have been achieved in order to promote the concept at their captive clients and to take the opportunity to improve their market share with new innovative concepts following the scheme of sustainable chemical use and a win-win principle for the user and the supplier.

Finally, we found that it was difficult the Chemical Leasing implantation when the companies are small, because this commercial connection demand more time in analysis by lack of operation data and the operators are not accustomed to handle data sheets. In the Electroplating sector is difficult to find medium or big sizes companies.