Konrad insert

1.-
The regasification terminal of Triest: an obscure story
The regasification terminal in the municipal area of Triest (in Zaule) , designed by the GasNatural Energy multinational, is rich in omissions and forcing rethorics.

The project exists at least from 2004, when it was presented to few and powerful "closed friends" to get them interested through a good public relations endeavour. The procedure for environmental impact assessment, VIA – which demands public involvement – is initiated only in the month of march 2006. Two years probably spent in confidential lobbying, to guarantee political and economical crosswise support that could prove useful in the future (from AN to DS, to the mayor of Triest, to the president of the port authority, unions, industry managers etc.)

In the month of august 2005, long before the beginning of the environmental impact assessment Via, the regional technical committee of the fire men authorities has issued the "Nulla Osta" or green light approval for those matters concerning safety: the procedure was not coordinated with the VIA, and the public could not get involved or be taken into consideration.

The project and GasNatural VIA studies do not include the absolutely essential methane pipe line that connects the terminal with the methane pipeline with net, while the project of the competitor Endesa for an off-shore regasification unit includes it: an enormous disparity vouched by the Ministry of the environment.

In spite of continuous requests – and some isolated promises – none of the public bodies (Region, Province, Town authorities) involved in the VIA, has bothered to involve the local scientific society, for a support in the analysis of the problems that could develop from the GasNatural project.

In June 2008, the VIA Commission of the Ministry of Environment issued a positive opinion, further supplemented and clarified by two other opinions in March and July 2009, until the final decree of the ministers of environment and cultural heritage arrived (July 17, 2009). Concerning the off-shore terminal project offered by Endesa, with the VIA presented one month before the competitors project – no news have arrived from the VIA commission. Now we are waiting for the conference services, coordinated by the Region, responsible to issue the final authorization.

The VIA Commission and almost all other entities involved failed to notice the blatant manipulation, quirks and shortcomings of the studies of GasNatural-Medea, although well documented in the comments of the public. Ditto for violations of Italian law and community regulations.

Environmentalists and committees have complained many times: the basic principles for a fair and impartial assessment of environmental and safety issues have been disregarded at a terminal which poses serious problems to the Trieste locality. In spite of this, institutions and local economic-political world have sided overwhelmingly in favour of the project.

This special report summarizes the most significant events of the story and the main criticism. As a conclusion we find a desire that to all costs - with the complicity of the competent technical bodies –impose an installation in the Trieste surroundings that is dangerous, based on a technology producing a relevant environmental impact, in a place totally unsuitable to accommodate it.

The purpose: to transform Trieste and its gulf, permanently, in an "energy hub" to the detriment of any other alternative economic assumptions (industrial, commercial ports, tourism). Which would explain why the Italian governments, from D'Alema to Frattini (including Tondo and others) for years offer to Slovenia, rather critical on GasNatural, a "swap": acceptance of the regasification terminal in Zaule against help for the construction of the Caucasus pipe line and Italian participation in the doubling of the Krsko nuclear power plant.

The local public opinion, never seriously involved in the evaluation process, was cajoled by every kind of promise: from the relation between the construction of the regasification terminal and the closure of the Ferriera (with no ground) up to facilitated petrol prices.

Konrad will instead support those who oppose this devastating project: At the end of this report (p. XI) you will find the required coordinates for those who want to help the campaign launched by WWF and Legambiente for legal action against the ministerial decree that paved the road to the regasification terminal.

Artist view of the regasification terminal in Zaule according to GasNatural

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2.-
Energy policy? No, thanks a lot.

In a civilized country, the strategic decisions on energy are taken by the State, based on programs covering several years and that should include: type and infrastructure conditions, environmental protection, analysis of costs - returns and safety.
First, consumption should be rationalized and wastes reduced. Only after proper analysis of these parameters, made with a transparent and participatory process (as required by the European Directive No. 2001/42/EC on Strategic Environmental Assessment), we should examine and evaluate the projects of individual plants.

None of this has been done in Italy for the regasification plants.

There is not in fact a National Energy Plan and the present government do not consider it among its priorities, leaving complete freedom to the "market" (i.e. to large multinational Energy groups) for any decision on the choice of sites, technologies, and even the number of installations to be built.

The previous government declared its intention to adopt a plan, but failed to go beyond a press release (!) undersigned by the Ministers of the Environment, Pecoraro Scanio, Economic Development, Bersani, and Infrastructure, Di Pietro, who in August 2006 stated as necessary (Nobody knows on what basis and and which scenery) the construction of 3-4 regasification terminals by 2010 and 1-2 regasification terminals by 2015, without specifying any criteria for the location nor giving indication on the best technologies to be used. They simply were to expedite the process of evaluation of the seven projects with the corresponding VIA assessments already in the pipe line, among which GasNatural of Zaule and the off-shore installation of Endesa in the Gulf of Trieste.

The project was to be made before the programming instead of the other way around. It would have been advisable to at least give some thought to the technologies to be used since it is possible to regasify LNG without employing sea water; the regasification terminal for Koper (but rejected by the Slovenian authorities) used other technologies to avoid the environmental impact resulting from the use of sea water, particularly damaging in a basin with limited water exchange with the open sea.

The whole business of LNG terminals confirms that there is no national energy policy worthy of the name and that government decisions are reduced mostly to ratification as provided by the large lobby of oil, gas, coal or nuclear energy. It was like at the time of public trusts like ENEL and ENI-SNAM, and it is the same today after the appearance in the picture of private entities.

As long as the energy policy will be made by these lobbies, the reduction of energy consumption will never be a government priority. Yet, at least one third of the national consumption of methane is used for building heating, while houses built with advanced criteria reduce Energy consumption by 80 and even 90 percent.

3.-
Matteoli-Zapatero effect?

A couple of years ago, a group of researchers and professors tried to obtain the attention of some public administrators on environmental impact studies of the regasification plant. Shortcomings were at sight and even irregular project related documentation. An attempt was made with the then town official chairman Cosolini and mayor Dipiazza: in both instances without success. Several local DS dealers were contacted (Zvech, the same Cosolini, Barbo, Dolenc and others) who without any hindrance simply explained: GasNatural project is supported because the group is close to the Spanish socialist friends and because there is an OPA (Public Purchase Offer) on Endese; and Endesa, as known, is cahoots' with Aznar (Spanish centre right). If we make Zaule project be allocated against the Endesa's – it was told – we give a hand to GasNatural to acquire it.

With time several details were clarified. Concerning the studies on environmental impact of the off-shore regasification terminal in front of Grado, Endesa commissioned a referenced design company (D'Appolonia). For the Zaule project instead, GasNatural entrusted the job to an anonymous Luxembourg company, based in the surroundings of Lugano. On the cover of the reports of this Anonymous enterprise you could find only the family names of the staff without names and without professional qualifications which made it difficult to ascertain if they were distinguished experts known in the engineering world.

This type of projects requires a certain amount of the so-called "public relations". When entertaining in this sensitive subject, attention should also be given to "the voices of the corridor"; it is said thus, that at the beginning it was required, first of all to touch the heart of the corresponding Minister, Matteoli of AN. In fact the local officials of that political party were the first supporters of the project, and now claim their coherence for a quick yes (even before the presentation of the final project documentation).

As stated in the regasification terminal Blob- of this number, the green light of the DS (now in the PD) came shortly after and has survived until today, even among many contortions and specious appeals to future debates, forums procedures "Agenda21 type" and "technical round tables" or "thematic" in reality never even tempted. On July 3, 2008, l'Espresso threw a shot that caused more than a few tummy aches especially to the DS, saying: "Gas Natural has forfeited the" yes "for the regasification terminal Zaule thanks to pressure applied directly by Zapatero."

The more general problem is that in Italy we know nothing of private funding to parties and individual candidates. In the U.S.A. on the contrary, the lobby - including those of energy- promote their men in the sunlight. A democracy, perhaps a little 'far from that of the Athens of Pericles, but at least there, the "games" are almost clear. Some "public relation" do their best to muddy the waters, but still they have to deal with scientific and technical institutions of control, often extremely qualified. In Italy instead ...

4.-
And what do we do with all this liquefied natural gas?

According to the Gas and Electricity authority, in 2007 natural gas consumption in Italy stood at 83.5 Gcm / year (billion cubic meters 83.500.000.000) of which 70 came via pipelines, a marginal part (3, 5 Gcm / year) in the form of LNG (liquefied natural gas) to Panigaglia (La Spezia), about 9 to 1.3 from domestic production and stocks. In 2008, consumption grew to 86 Gcm. The projected consumption would rise to 100 Gcm in 2010, but forecasts have been downgraded because of the economic crisis and moved at best, to 2020, especially considering that in the first half of 2009, consumption dropped by 23%. The Italian Petrol Union estimates that Italy will require 94 Gcm by 2020.

The world market at this stage is characterized by a surplus of supply that is widening in Europe because of the crisis, the growth of renewable sources and the coming into operation of new production capacity.

The pipeline network bringing gas to Europe is expanding: we have on construction, the North Stream with a payload of 20 Gcm / year but with the aim to arrive in 8 years to 55 Gcm yearly, the Nabucco with a capacity of 30 Gcm/year, the Blue Stream pipeline travelling 1.250 km through the Black Sea to Turkey, the South Stream connecting Europe with the Black Sea, as an alternative to gas coming through Ukraine.

The Italian pipeline network consists of four main branches: from Northern Europe, Russia, Libya and Algeria, carrying around 70 Gcm/year but with a theoretical capacity of 90 Gcm / year, and a percentage of use of 80%. The Transitgas (via Switzerland) brings 16-22 Gcm/year of gas coming from the Netherlands and Norway. From TAG (Trans Austria Gasleitung) arrive 28 Gcm/year of Russian gas, which will be increased to 33. The TMPC (Transmed) arriving to Mazara del Vallo has a capacity of 27 Gcm/year which will be enhanced to 35. In Gela arrives from Libya, through the Green Stream, 8 Gcm / year, in the process of increasing to 11.

GALSI (pipeline Algeria/Sardinia Italy) from Algeria is under development and should bring 8-16 Gcm/year into Olbia. The TAP (Trans Adriatic Pipeline) is also

planned, connecting Italy with Albania and carry 10-20 Gcm/year from the Russian South Stream, and the IGI (Interconnection Greece-Italy) with 8 Gcm/year of gas coming from the Caspian Sea.

When the new pipelines will be completed, the additional payload of gas may exceed 40 Gcm. With the enhancement of the existing ones, implying an increase in payload from Africa and Asia, will add 16 Gcm. The amount of gas arriving in Italy by pipeline could exceed 126 Gcm/year.

To the amount coming via pipelines must be added the 8 GCM from the offshore regasification terminal of Porto Viro, the 4 Gcm from the offshore regasification terminal of Livorno and 3.5 Gcm of Panigaglia and probably further 12 Gcm if the hypothetical construction in Gioia Tauro takes place.

The amount of gas available for the domestic market could therefore reach 154 Gcm/ year. AEEG is planning 14 regasification terminals- that even if not all of them will be implemented - would constitute an additional contribution of further 90 Gcm, reaching 240 Gcm/year of gas arriving in Italy, three times the current consumption rate.

The last three governments that have followed over the past 10 years have decided to turn Italy into a European hub for natural gas, which contrasts clearly with the lack of availability on the international market for liquefied gas and the strong competition from other countries for an excess regasification capacity of 40% compared to the amount of gas that is liquefied by the producing countries.

Regasification capacity of LNG available in the world.
Liquefying capacity production of LNG available in the world.

5.-

If they build it we will have to pick up the tab.

The regasification terminal of Zaule is requested as a priority by industrialists and all sorts of "entrepreneurs", who argue that the terminal means methane for the industry and domestic use at reduced prices. Too bad that figures and data to support this theory have not been provided. Nor is there a certainty that the regasification terminal will actually regasify LNG imported by sea. For the good reason that there is not enough liquefied natural gas available: the ability of existing and planned regasification terminals is by far superior to that of liquefaction plants, which should feed the LNG transported by sea. Various terminals in the world (eg Spain), even before the recent economic crisis, work at low regime for lack of raw material.

The truth of the matter is that the builders of LNG terminals in Italy, do not lose out ever. Even if their facility was short of LNG, in fact, the yield would be guaranteed. The Resolution n. 178 of 2005 of the Electricity and Gas Authorities (AEEG) specifies "*to promote the construction and use of new terminals*", that "*even in case of failure to use the terminal*" 80 percent of the revenues are guaranteed by the gas transport tariff system for a period of 20 years.
In other words, the companies bringing the gas to the end users with the pipeline network (i.e. SNAM, ACEGAS-APS, etc.), will guarantee the builders and administrators of the regasification terminal 80 percent of the expected revenues for a period of 20 years, even if there is not LNG to regasify. It is obvious that those companies will reverse this cost in the prices to the end users. A long way from the methane at discounted prices expectation.

Resolution No. 178, valid for three years, has been replaced by resolution n. 92, 2008, confirming again the mechanisms, but reducing the percentage of revenues to 71.5 percent.

In a market economy, as supposedly is the Italian economy, risks are part of the game (otherwise what kind of free market would it be?) of any enterprising activity. The Italian version of the market, seems to consider the risk (in this case to find yourself without LNG) to be paid by the consumers (or maybe tomorrow by the government, i.e. taxpayers). In the best tradition of some entrepreneurs so skilful succeeding in privatizing profits, and socializing losses.

6.-
Tokyo, Barcelona and Trieste.

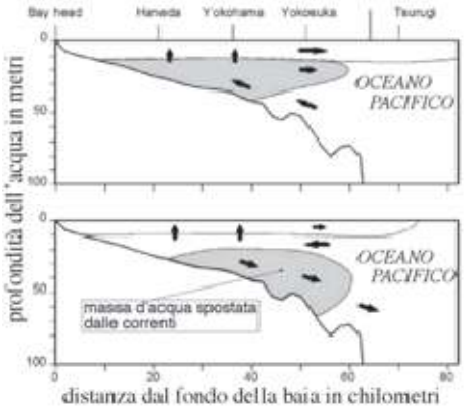
From the interview of "Vita Nuova" to the then President of the Region, Illy (January the 12th 2007).
V. N.: «people *talks about the risk of the lowering temperatures in the Zaule bay*".
President Illy: *«I remember that in the bay of Tokyo, with a depth of 16 meters*

against the 22 meters of the gulf of Trieste and about double the size, there are 5 regasification terminals and that no problem concerning water temperature has ever been recorded. Therefore the problem is non existing"

.

Illy could not be clearer. He states "*I remember*" because he has already said it "ad nauseam". "«*The problem is non existing*» full stop.

The editors of the Vita Nuova, however, are hard headed. One has taken a look at an atlas with the depth of the bay, and things did not add up. So, soon after, the weekly diocesan is able to describe the hydraulic regime of the Bay of Zaule on the basis of what is published in the more important International scientific magazine (the journal of the American Geophysical Association).



Profondità dell'acqua in metri =Water depth in metres.

Massa d'acqua spostata dalle correnti =Mass of water displaced by the currents.

Distanza dal fondo della baia in kilometri = distance of the bay head in kilometres.

Oceano Pacifico = Pacific Ocean

"The reader can see the figure at the side"- wrote Vita Nuova - extracted from a 2002 article of the Japanese Fujiwara and Yamada in the Journal of Geophysical Research. The Bay of Tokyo is about 60 km long and its depth increases fairly regularly from zero to 80 meters, till it sinks into the Pacific. [...] The circulation of water in the Tokyo Bay is completely different from that in our bay. The strong daily tidal movement, ocean currents and monsoon regime make it possible to renew the entire volume of water of the Japanese bay in just 8-16 days (while the Zaule Bay has a scarce exchange of water with the Adriatic Sea).

The black arrows in the figure show the movement of the water at the entry and exit of the tidal current, which displaces toward the ocean a mass of contaminated water (in gray). Then it all ends up in the Pacific, which has an immense potential reception capacity.

Obviously, this makes the cooling and chlorination much less critical than in the Gulf of Trieste "(see also Il Piccolo 4/10/08).

But this has not prevented the city councillors Stephen Ukmar (ACEGAS-APS employee, who wants to become a shareholder of the future regasification terminal) of the PD and Roberto Sasco of the UDC, to repeat the arguments of Illy on July 30, 2009, during the vote of the City Council on the Grado-Trieste- Villesse connecting pipeline required by the regasification terminal of Zaule.

Another case often mentioned is the one concerning the regasification terminal of Barcelona.

In his blog, for example, Mayor Dipiazza, on the 18th of July, responding to a fellow citizen, wrote: *"Go to Barcelona, there is in the port for more than twenty years a regasification terminal, a hundred yards from where the tourists disembark"* . And then on July the 21st to another fellow citizen: *"In the port Barcelona there is a regasification terminal, virtually within walking distance from the centre. This for twenty years. "*

Sharp statements like those of Illy, and, as we shall see, equally valid.

Yet, recently, the mayor said he had drafted the new regulation plan of Trieste using also the Google Map. The public relations officers of GasNatural may not have asked him to click on the area of Barcelona. Let us do it for him.

With black dots, we reported the two liquid methane reservoirs of the regasification terminal in Barcelona. We see that in a radius of about 3.5 kilometres, there are only industrial areas (“*industrial estates Pratenc","La Franca ","Pedrosa"*, etc.)The historical centre and the touristic port of Barcelona are located in the north, beyond *"Avinguda del Parallel",* about 4 km from the terminal. The Centre is also shielded by the *"Parc de Montjuic"* hill (in green in the figure).

As regard to Trieste on the contrary, see the other figure. The mayor can compared them directly, because they are the at the same scale; he will realize that the intense building around via Valmaura is one kilometre away from the future terminal, the popular neighbourhood of via Flavia are little more than one and Muggia is one kilometre and a half. If we consider 3, 5 km we reach viale D’Annunzio.

Mayor Dipiazza uses the expression “there is in the port for more than twenty years a regasification terminal “to reassure us. He obtains the opposite result. For two reasons:

First at Zaule some homes are even 120 meters from the border of the future installation.

Secondly, in advanced countries terminals so close to the city, to dangerous reservoirs and such hazards as in Barcelona, are not built anymore. And even less in a city such as Trieste. The U.S. Congress for example has already recommended in 1979 not to build more LNG terminals in urban areas. People have realized that the facilities in Philadelphia and Boston are too close to the homes. In Boston, when transfer is underway by the gas transporting ship, flights stop at the city airport.

7.-

Does the construction of the terminal mean the death of the port?

From accident to accident the prevention sensibility makes its way also in Italy. It is evident that also in Trieste we cannot continue depending almost exclusively on the skill of ship captains and the common sense of the other ship commanders as done so far by the Harbour authorities of Trieste. An example of this superficiality is Ordinance 8/2006, which does not demand special safety distances among tankers during unloading, but only the usual 200 meters from the docks of the oil/gas terminal.

More up to date is instead Ordinance No 63/2008 of the Harbour authorities of Chioggia for the new regasification terminal of Porto Viro. No director, however, seems to have bothered to learn about the likely implications of modern prevention on the future of our Harbour, to ascertain whether this evolution of safety standards on navigation of liquefied gas tankers (and prohibitions to other ships when there are gas transporting tankers at the pier or berthed at discharge) that may threaten the prospects for expansion and even the present business of the port.

In particular, it seems to be a doubtful incompatibility between:
1) the safety distance from the gas tankers approaching and manoeuvring in the bay;
2) the safety distance from the wharves of the regasification terminal;
3) the strong growth in container traffic expected (3-3,5 million containers) after the doubling of the VII pier and the construction of the VIII pier;

4) the location of the planned ferry terminal at the bottom of the Bay of Zaule;
The Ordinance of the Harbour of Chioggia mentioned, indicates the evolution of safety standards. For the regasification terminal off the coast of Porto Viro, the government had in fact, to comply with the rules of the International Convention for Safety at Sea 1974 (SOLAS, chap. V paragraph 10, and the Harbour authorities of Chioggia have complied). It has been defined a "safety zone of 2 km radius" around the terminal. In this area, are *permanently* “banned transit, anchoring, the stationing of ships waiting, [...] and any other activity”.

Our Ministry official Menia confirmed on July the 9th, answering in Parliament on the 3-00270 query concerning the regasification terminal at Porto Viro: The prescription of those Harbour authorities “are based on the document of the International Maritime Organization n.1 / Circ. 257, 11 December 2006, on "Regulatory measures in addition to the traffic separation schemes".

How do our administrators think in the future to reconcile the presence of LNG carriers, oil tankers, ferries and containers in the Bay of Muggia?

Are they aware that - luckily -the rules of international security will end the current Italian bad habits? That the simultaneous presence of oil tankers and gas carriers will block navigation and manoeuvres for significant periods of time, forcing the port to a non continuous activity in bursts?

Do not take for gold the reassurances of our Harbour authorities of recent years in agreement with GasNatural, because soon we will have to adapt to the international guidelines of the International Convention SOLAS and IMO (International Maritime Organization), as was done for Porto Viro.
We believe that the acceptance of the new rules in Trieste would have the effect of completely blocking the harbour from pier VII (future VIII pier included) all the way to the end of the bay through the necessary period required for the 100-120 gas tankers expected not only to enter the bay, but also to discharge the gas.

In short, all the work of the Port Authority to expand its trade and its new regulating program will drown in a crowded bay blocked three times a week?

8.-

What Slovenia thinks about the terminal.

It is just obvious that two European countries should exchange opinions on the construction of a large plant near the border. But with Slovenia we seem to try to be the overpowering party

Yet, he Republic of Slovenia has done a serious work on our regasification terminal, and, unlike our own researchers, theirs have also published some of their analysis on accredited scientific journals.

The outcome: the report that this government has sent to Italy, on the transboundary environmental impact of the regasification terminal Zaule. The report was put together by the Slovenian Ministry of Environment and the Territory in

October 2008, after consultations with the Ministries of Economy, Defence, Health, Culture, Transportation, Agriculture, Forestry and Food and the National Institute for the Protection of Nature.

The Slovenians provide their assessment of transboundary environmental impact according to a five-level ranking: A - no impact, B - negligible impact, C - irrelevant in view of possible mitigation, D - significant, E - destructive. From A to C ranking impacts are considered eligible. D and E are considered ineligible for the environment and human health.
All competent Slovenian authorities have given a negative opinion concerning the effects that the regasification terminal would have on the environment, health and safety of persons and property, both in Italy and in Slovenia. For the following reasons:
- Concerning accidents and loss of oil from ships, the terminal would have a destructive impact on the marine environment (E);
- From the point of liquefied gas tanker traffic, transboundary impact on fisheries would be significant (D);
- Impact of mercury brought from the bottom: it would be destructive (E);
- The danger of possible accidents has been assessed as relevant (D);
- Transboundary impact on maritime traffic has been assessed as destructive (E) in the event of a collision with a vessel carrying liquefied natural gas (LNG);
- The impact of cross-border transport of harmful organisms is assessed relevant (D).
Transboundary impact in most cases is significant (D) and for their individual results even destructive (E). This is mainly due to the resuspension of marine sediment with mercury, thus on fisheries and sea farms, and transboundary impact related to the danger of possible accidents and transportation of harmful organisms.

Therefore the impact on human health (methyl mercury in the food chain, accidents, psychological impact) is evaluated as significant (Assessment D).

Like in the U.S.A. and Great Britain, also Slovenia states that consequences of possible terrorist attacks should be considered. The location of a regasification terminal in a big city makes the target much more "attractive" to terrorists than the same facility away from residential areas. Together with the intrinsic hazard of LNG terminals and liquefied gas tankers, is the reason why in Philadelphia and Boston is being considered to displace this type of installation, built decades ago near the town without consideration to prevention.

9.-
Poor Bay of Muggia

The regasification terminal of Zaule would impact the marine environment because of the high volume of seawater required for its operation, a problem exacerbated by the conformation of the Bay of Muggia (low depth, limited water exchange also caused by the breakwaters). In normal operation, the regasification unit will employ about 25,000 m3/h of seawater. The entire volume of water of the bay (about 100 million m3) would flow through the plant more than twice a year. In one year about 4-5% of the entire water basin of the Gulf of Trieste (8,800 million m3) would circulate through the system, an amount far greater than that used by all industrial establishments currently operating on the shores of the Gulf.

Chlorine will be used to prevent the clogging of pipes by marine organisms. Contrary to popular belief, the biggest problem is not in the amount of residual active chlorine at the outlet of the installation, that – although damaging - could be kept to a minimum (or neutralized by chemicals) before returning the sea water to the basin. The most important part of environmental damage is due to the passing sea water through the system, where the combination of chlorine, thermal shock and mechanical stress involves the sterilization of all that it contains.

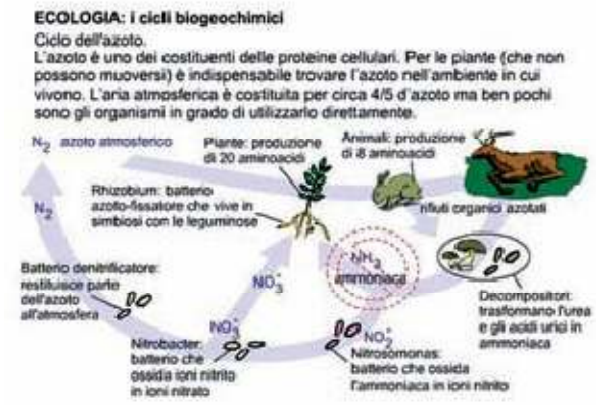
All that is swallowed by the installation is therefore returned sterilized, destroying present life forms, oxidizing mineral salts called "nutrients", and rendering back toxic chemical substances that result from the reaction of chlorine with organic matter. Fate that would involve a significant proportion of the water of the Gulf of Trieste, where the water exchange – notoriously - is much lower than other localities hosting similar installations.

To this impact must be added the synergistic effects, associated with the use of water - albeit in smaller amounts – by other industrial installations already operating on site (co-generation "Electra" plant and Ferriera of Servola), in addition to marine vessel traffic directed to the oil terminal and the regasification installation. The turmoil created by the propellers and the transverse displacement of large draught hulls with that would result in the resuspension of contaminated sediment.

More in detail, the risks to the marine environment - already documented by publications of the Laboratory of Marine Biology (Trieste) – by the use of sea water would be the following:
- For the production of organic matter by phytoplankton: the removal of ammoniacal nitrogen, essential to initiate and support the development of sea vegetables.
- The carbon cycle operated by marine bacteria: altering the bacterial community loses the regulator of one of the most sensitive biogeochemical cycles that - precisely in the Gulf of Trieste - has already given numerous signs of stressful conditions with the appearance of mucilage.
- For the phytoplankton community: this group of organisms respond gradually over time to environmental atypical events, with the appearance of algal cells smaller than in previous years (already in the comparison of data from 2003 referred to 1995)
- For the fish community: the loss of quotas of eggs, larvae, fry, which would then pass through the system.

Under current continual stress conditions of the main local marine biotic communities, and plankton in particular, the use of seawater for a regasification installation is therefore considered an "unusual environmental event" intended to remain on site throughout the operating life of the terminal and capable of compromising the biological mechanisms that underlie the marine community in the Gulf of Trieste.

All these problems have been completely ignored in the studies of GasNatural-Medea!

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Ecology: the biogeochemical cycles
Nitrogen cycle.
Nitrogen is a component of the cellular
protein. For plants (not able to move)
it is indispensable to find nitrogen in
the environment in which they live.
Atmospheric air consists of about 4/5
of nitrogen but few organisms can use
it directly.
N2 Atmospheric nitrogen
Plants: production of 20 amino acids
Animals: 8 amino acids production.
Nitrogenous organic waste.
Rhizobium: nitrogen fixing bacteria
living in symbiosis with legumes.
NH3 = Ammonia
Decomposers: transforming urea and uric
acid into ammonia.
NO2 Nitrosamines: bacteria that oxidize
ammonia into nitrate ions.
Nitrobacteria: bacteria that oxidize
nitrite ions to nitrate ions
Denitrificating bacteria: Restores some
nitrogen to the atmosphere.
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Even at sea the nitrogen cycle would be upset
Resuspension of sediment during marine operation of oil tankers in the Bay of Muggia (The problem does not exist, according to studies GasNatural-Medea ...)

10.-
The tricks on temperatures

Roughly, the problems tackled by the consultants of GasNatural were: A) given the size of the discharge, is it feasible to make the production cycle? Or, especially in winter due to poor circulation with the open sea, the cooling will occur progressively and will come close to the freezing temperature? B) What effect the cooling and chlorination will have on the environment?

The first to reply (Spring 2006) was the company Alatec 'the cold water discharge remains in the basin with the result of a water general temperature decrease [...] This would not be acceptable for the operation of the installation, because this would generate a progressively colder recirculating water.

But GasNatural and the anonymous Luxembourgish Company Medea, in page 282 of the Environmental Impact Study also write that the entire Bay of Muggia will experience a temperature decrease of less than one degree. The non-technical summary of Medea presents the issue even in these terms (pp. 111-112): "weak local decrease in water temperature" zero impact (or non-valuable) [...] It is not expected to imply changes in the local ecosystem. "

In December 2006, GasNatural presents the first set of integrations. Now the consultant is DHI, the staging is always from Medea. Critical to the calculations of how the water disperses is the temperature at various depths and the more demanding conditions are those of the winter, with Bora.

To the new consultant somebody gives a favourable temperature profile of the bay (which refers to average winter conditions from Ancona to the North Adriatic, with a bottom depth of 50 meters while our bay has 20 meters) On this basis, DHI comes to the conclusion that no problem exists, but yet considers it necessary to stress the fact that the calculation is based on the temperature profile (for which DHI is not liable and probably does not trust).

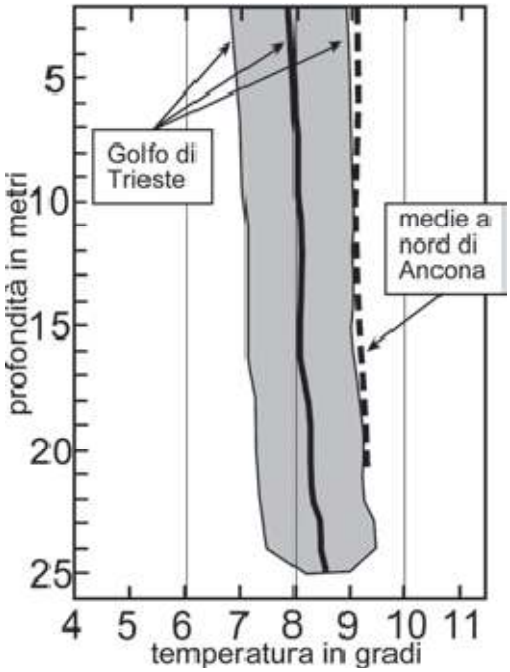
This report written in Spanish is accompanied by a translation. An anonymous document, with a logo that appears on the cover half erased with electronic eraser, completely devoid of recognisable identification and / or addresses. And the conclusions translated by the anonymous are not as pessimistic as those presented earlier by Alatec; they have become even more reassuring and more extensive than the original DHI document; in addition, the temperature warning considerations have vanished.

Second round of integrations, once somebody has officially reported the queer translation to the responsible ministries and to the Regional authorities. The consultant is still DHI, who this time presents two calculation reports of over 100 pages each, one in Italian and one in Spanish, both identical and both hand-signed by the engineer Jose Maria Medina Villaverde "Director of the Marine Division". He uses a three-dimensional calculation code, which produces superb colour images. He declares that no temperature measurement of the bay was available, and thus he continues to use the average temperature measurements for the upper Adriatic from Ancona.

Conclusion:
"The discharge of the water produced by the regasification process creates in all seasonal and/or meteorological conditions, values of temperature differences that are significantly below the limits indicated by the Italian legislation, [...] Any effect of "general cooling" and / or progressive of the Bay of Muggia in case of discharge into the Bay can be discarded"

Temperature measurements of the upper Adriatic from Ancona used for Zaule
Anyone using the so-called "models" for calculating, knows that these physical-mathematical simulations can bring out a result aesthetically beautiful, but unreliable. In this case, it is obvious that temperatures were to be measured on the site in the different seasons, from the bottom to the surface. Or refer to the plentiful measurements available for the Gulf of Trieste. The use of a single profile of the average winter temperature in the upper Adriatic from Ancona, with average values greater than 9 ° in February, is unacceptable. The reason is clear by looking at the figure reported, obtained from more than 4.000 temperature profiles in the Gulf (OGS database). In the years covered by the catalogue, the average values are about 8 °, and 68% of the measurements are included in the interval from 7 ° to 9 °. The 9 degrees and more used in the project represent favourable or rare conditions.

And after the reduction of 5 ° declared by the designers, in the same span of years, there would be a 16% chance that when the plant discharges processing water in the bay, temperatures could drop below the 2 °, and a 2.5% chance to go below 1 °.



Gulf of Trieste.
Average values of the Upper Adriatic from Ancona.
Depth in meters.
Temperature in degrees.

Temperature curves of the upper Adriatic

11.-

Disturbing anomalies:

Strange anomalies in the documentation delivered by GasNatural-Medea for the VIA on the regasification terminal Zaule. The technical reports on many different issues (urban planning, environmental science, economics, plant engineering, hydraulics, construction management, pollution, meteorological, oceanographic, industrial hazards, fire techniques of navigation, architecture, low temperature product category, etc..) often exhibited the same family names, without first names, professional qualifications or signatures. It was therefore impossible to verify both the curriculum of the designers, or trace their personal professional responsibilities. The recurrence of the same names as experts on topics as diverse made it unlikely that these could be licensed professionals.

It then came out that the experts were a couple of former employees of the ENI group, some independent experts not particularly famous, and some recent graduates.
In addition, the Region, the Province, the Municipality of Trieste, and several politicians, clearly showed their intention to keep the local universities and scientific institutions outside out of the game.

When, later, a professor of the University of Trieste (prof. Bevilacqua) ended up as a consultant to Medea / GasNatural, the most important university bodies did not apply - it seems - enough formal and substantial controls. Yet it was a crucial report on the so-called domino effect (industrial accidents in a chain from the regasification unit and the LNG carriers toward the outside, or from the factories around toward the regasification terminal, with obvious implications on public safety). It appears that two different versions have been filed, with the same date. Both on letterhead CINIGEO consortium, which includes the University of Trieste, with the mentioned professor as author, but without the names of the authors and with no signatures (the documents would then be semi-anonymous.) Without considering the substance of the report, it should be noted that in one way or another, it also spends the good name of our university.

To build even a private veranda, a licensed professional must sign the project: To ensure safety in case of industrial accidents in a chain from the regasification plant a simple piece of paper with no signature is enough.

12.-

How to freeze and cook guys from Trieste and Muggia.
When a fracture or rift in the containing vessel of a tanker or the storing LNG tanks on land takes place, due to a structural failure, bad functioning of the unloading system, improper functioning of the control system or a terrorist attack, liquefied natural gas (LNG) is liberated and it gradually vaporizes. The evaporation rate is around 0.135 kg/sq m/s (kilograms per square meter per second) at a temperature of phase transition (-162 ° C) from liquid methane to methane gas (natural gas is composed almost entirely of methane).

From the fracture of the containment system, the fluid leaks and is stratified on the soil or water surface (where the thermal flow makes the liquid methane film to boil), since LNG has a density about half that of water. The gas, with an specific volume 625 times greater than that of LNG, produces a super-cold cloud (-162 ° C), with a density 1.5 times that of air, that expands gradually, dissipating less quickly on the ground where the heat exchange is lower, following a path determined by the prevailing winds at a height not exceeding 30 meters, until conditions for ignition (the ignition temperature is 632 °C, the highest among hydrocarbons and the limits of flammability correspond to a percentage in volume between 5 and 15% in the air) are found. The cloud of cold vapour methane resembles a very thick fog and is basically an aerosol of water, ice, air and methane. Even if the does not ignite; the impact on populations is catastrophic, with immediate death by asphyxiation and rapid freezing. Regarding the infrastructure, we must bear in mind that at extremely low temperatures most materials become brittle.

In densely populated areas an ignition source is likely to be present, in remote areas or the sea it may be less likely to find it.

With the use mathematical elaboration it is possible to make forecasts (modelling) on the progress of the cloud in relation to the various mechanical, physical and meteorological parameters. It is possible to study changes occurring in the cloud and the relations between the boundary and the cloud, which remains heavier than

air until its temperature reaches -108 ° C. The distances of impact produced by accidental releases and intentional events arrive within 10-15 km from the point of release. During the dispersion process heat exchange takes place between the cold methane and the surface of the sea or land surfaces, which gradually reduce the density of the cloud.

The cloud of methane could ignite even at a considerable distance from the source of release. From the flame front, which reaches a temperature of 1800-2000 ° C, radiates an intense heat that can incinerate any living being and also damage the infrastructure, cement and steel, wherever the intensityof 37.5 kW / m² (kilowatts per square meter) is reached. Depending on the size of the mass dispersed by a storage tank, it is found that 3 to 7 km from the centre of the flame front reaches a thermal flow of 5 kW / m² (conditions permitting emergency operation for a period of several minutes with protecting clothes of insulating material), from 2 to 6 km to 12.5 kW / m² (enough energy to ignite the wood and melt the plastic), 1 to 5 km you reach a heat flux of 37.5 kW / m².

The LNG chain

13.-

The risk is all ours

The choice of location of a hazardous installation determines the assessment of the scale of risk, defined as the product of the probability that a harmful event happens to the extent of damage caused to people who may be involved, as well as to facilities and infrastructure of the territory. The risk management criteria to be followed should be shared by all stakeholders, starting from the people involved, through participatory democratic procedures, including referenda, as is advised by the EU. All possible hazardous events should be considered in assessing the safety of a regasification plant, opting for alternative locations that offer more security than those which pose a greater danger. In the specific case of the terminal suggested for Zaule, even with technologically advanced security systems, a serious accident or worse, a terrorist attack would lead to disastrous consequences for the inhabitants of the coastal areas of the Bay of Muggia.

If European Union documents are examined, and better if the standards and studies produced in Western countries and particularly the United States by public institutions (Department of Energy [DOE], Environmental Protection Agency [EPA] Federal Committee on Energy Control [FERC], etc..) and private (Sandia National Laboratories), which examines the scientific literature produced in research centres and universities of the entire world, are compared, we encounter a plethora of

studies on risks to the population and infrastructure, which may result from accidents or attacks in which the regasification terminals for liquefied natural gas (LNG) are involved. The common denominator of these studies is: not taking anything for granted and instead taking into consideration events less likely to happen. Related events during transport by sea on a ship transporting gas, the discharge phase and phase of the LNG storage in cryogenic tanks, the consequences arising from the location off the coast or on the coast.

Besides the possibility of catastrophic events due to collisions of gas carrier ships or collapse of the containment structures, scenarios for terrorist attacks are also considered because it is well known that the sight of the destruction of a power plant raises the interest of terrorist groups, with missile systems direct to the vessel or storage tanks. It was possible to assess that, because of the latent heat of phase transition from gas to LNG, the energy impact of the missile may be insufficient to trigger the ignition of methane. The possibility of cyber terrorism is not overlooked (i.e. the decommissioning from hackers of control systems and power supply computerized security systems, electricity networks and communication systems that are fundamental for the control systems).

For safety reasons, during the approach manoeuvre of the ship to dock and evolution wharfing, air and sea space should be kept off limits to prevent any catastrophic event. In the United States the exclusion zone during the approach of the vessel corresponds to a channel 2 miles wide, while the excluded area from the tankers in the dock has a radius of 2 nautical miles or 3.7 km. In the case of the terminal of Porto Viro the Harbour of Chioggia set an *Area to Be Avoided* around the terminal groove of 1.5 nautical miles and a secure circular area of 2,000 meter radius where traffic is permanently banned.

The location of sites far from population centres or in open sea reduces the possible impact on people and infrastructure. To protect the community the site should include properly sized risk areas related to the consequences of the advancement of the cold cloud and the thermal effects in the event of ignition. In the United States discussions are taken place at the level of central administration, regarding the possibility of banning the construction of coastal re-gasification terminals. The concern is such that many of the new projects include offshore terminals 10 to 20 km away from the coast, while for the new coastal terminals the sites chosen are far from population centres for the safety of the public.

Pictures of the "Cole" U.S. Navy destroyer after the attack of a terrorist group using a skiff loaded with explosives. This attack has affected the safety procedures in regasification terminals.

14.-

When, where and why methane explodes

The cold cloud of methane ignites when the gas mixes with air in a proportion (range of flammability) between 5 and 15% by volume and the mixture finds a primer that ignites. The self-ignition temperature of methane has the highest value (630 ° C) compared with other hydrocarbons or mixtures of hydrocarbons such as LPG, and indeed the air/methane has a low reactivity, which limits the speed of propagation of flame from one area to another of the cloud, a speed that in the cold vapour cloud is low, of the order of 5-30 m / s. In the area of combustion the heat produced causes the dilation of the gas mixture.

The air/gas mixture, ignited, becomes explosive only if it is confined, that is, if it cannot expand freely. In this case there is a sudden and sharp increase of pressure (overpressure), the speed of propagation of the flame may exceed 100 m/s to reach 1000 m/s (3600 km / h) and the combustion reaction becomes so fast and the expanding force so violent that it becomes destructive, and an explosion takes place.

15.-

Landscape? Who gives a damn!

Between February 2005 and August 2008, the Superintendence of the landscape and architectural heritage of Friuli Venezia Giulia expressed to the Ministry for cultural heritage landscape a negative opinion on the project of the regasification plant, and repeated it thrice. The main reason: although it is a site which has been transformed to industrial activities, it is not permissible to add degradation to degradation.

August 2008: The Directorate-General of the Ministry asks GasNatural a "project of landscaping." Once received, they convene the Superintendent of FVG in Rome and asked him to give a "favourable opinion". In December, the Superintendent bends and signs, dictating certain requirements: a small retreat from the coast and partial silting of tanks (solution even more secure - ed), maintaining the shoreline and its green areas, and retreat to the land of works at sea.

Since the requirements of the Superintendent would have resulted in a substantial modification of the project and restart the VIA process, in January 2009, the Directorate General of the Ministry of Cultural Heritage seeks an opinion from the Ministry of the Environment, who replied that the works required by the Superintendent are such complexity (!) that cannot be done.

January 29, 2009: The Ministry of Cultural Heritage expresses a favourable opinion on the regasification terminal, without taking any account of the requirements proposed by the Superintendent of FVG. So, in front of the "big powers", the Ministry that should protect the landscape takes the competence of its own back stage technicians.

16.-

Rigass – Blog

Or: an anthology of rubbish, broken promises and words in freedom of politicians - and not exclusively – on the regasification terminal in Trieste.
(n.d.r.: unless differently stated, the citations are from the local paper Il PICCOLO)

§
Mayor Dipiazza (21/9/2004): “The LNG terminal in the ex-Esso facilities? ... One thing is certain: firstly we need to inform and discuss with the people ... We might even think, why not, on a referendum"

That is right, why not?

§
Bruno Zvech (6/3/2005): "I agree with those who say that if there is an industrial plan (note: the regasification terminal) it should be made known to the public. But without ideological cages or prejudices. Assessing the security issue. The environmental problem does not exist. These parameters should be informed to the citizens”

Does not exist!

§
Dipiazza (23/6/2006): We cannot go back to shower with cold water [However] I say that first we must explain very well to the population the relationship between costs and benefits"

Who has ever explained the costs and benefits even decently?

§
Councillor Lodovico Sonego, interviewed on 24/6/2006: *"regasification terminals, Oil pipeline, gas pipeline ... the politics of the region can be summarized in two words: full compliance"*

"Total surrender-condescending-submission-" to say it in Italian sounded bad (waiver of its role)

§
30/6/2006: "Very explicit the position of the Ezit Board that yesterday, as anticipated by the Chairman Eng. Ferrante on a hearing in the Municipality, demanded to issue, the same way as the Province and other government agencies a " collaborative opinion " clearly expressed through a vote in favour of the project GasNatural on ground "on condition that the cooling waters are kept in a closed cycle”

il BLOB nel BLOB: 1) “demanded to issue”… 2) after two cycles in the installation, water freezes and bye bye baby”.

“This matches the plate that protects the Chamber of Commerce from humidity avoiding distorted radiations from telluric and cosmic origins“

§
(30/6/2006) Admiral Castellani, then Commissioner of the Port and Commander of the Harbour: "Very explicit Admiral Castellani:" I do not see any additional problems

for the Port if LNG carriers arrive - insists - because the concept of dangerousness is relative". The reporter asked him which between Endesa and GasNatural, is the best project. Answer: "we must focus on what brings more ships into the harbour"

With all due respect, Sir Admiral, get somebody to translate the international guidelines on safety and put your glasses on.

§

9/7/2006: "Strongly based on the consensus received from the citizens, politics is to decide on the GasNatural installation" utter in chorus Lippi and Omero.
Deep in the night in the city council: "AN and DS isolated and fully determined in a "extremely tough way" to say yes, regardless, to the GasNatural project"

Right and Left together for the well being of the Community

§

24/7/2006 (from «In Città») Lodovico Sonego, responsible regional councillor: "If someone wants to propose the politics of hunger and cold go ahead, the Government of the Region will be on the other side." Notes the journalist: "it remains to be seen whether the Gulf of Trieste is the appropriate place." Sonego responds: "In theory, you could realize the regasification terminals in the top of Mount Blanc, but I think the large shipping companies would encounter some logistical problem"

No comment

§

20/8/2006. Prof. Giacomo Costa, former Dean of the Faculty of Sciences and emeritus professor of chemistry writes that "there is danger of fire and explosion." President Riccardo Illy said: "The risk is zero because liquefied gas does not explode. The decision by local authorities, however, does not influence the opinion of the Region"

It is a matter of style.

§

Piero Camber (FI leader in the City Council and PDL Regional Councillor, 1/2/2007): "There are also risks in the regasification industry, although experts considered them residual"

The usual experts from Luxembourg?

§

12/7/2007. Interrogation with written answer 4-04351 by Roberto Menia: "while it appears completely disliked by the people the fact to position [The terminal] in the centre of the Gulf, it seems more acceptable the project of a regasification terminal at an abandoned area employed in the past for energy and fuels".

Acceptable to him.

§

The Regional Councillor Roberto Cosolini (2/6/2007): "The Authorities and President Riccardo Illy [...] stopped in front of potential hazards on environment and health of citizens"

Pit Stop

§

11/5/2007. “In the U.S. A.- says Illy - 50 terminals have been built and the environment was not altered at all, in the Bay of Tokyo, a bit 'larger than that of Trieste but similar in magnitude, there are five"

In the U.S.A the regasification terminals are 4 [four] and for two, sited in Boston and Philadelphia, discussions are staging to move them because too close to the city.

§

15/7/2008 Provincial Assembly of the PD on the GasNatural project. Former Alderman Lodovico Sonego "the study on safety, domino effect, for GasNatural, was done by a scientist from Trieste (note: prof. Bevilacqua) who lives 500 m. away from the installation site and therefore the study can be trusted”

Here are the guarantees
On the study, see Il Piccolo 4/10/2008

§

15/7/2008 Same assembly. UIL Secretary Luca Visentini: "Many biologists say that downloading cold water into the sea when it undergoes the effects of global warming, is positive”

Ingenious. Tell us a name, please

§

1/11/2008. Dipiazza: “If a nuclear power plant was to blow up, thousands of people will be killed. If the same thing happens to the regasification terminal, we would eventually have only some people hurt”.

No comment

§

18/7/2009. «Roberto Dipiazza reminded the leaders of GasNatural that "in Trieste people is serious [...] I did it because I am convinced that in front of a project of such relevance, we must act with great rigor.

Good thing he is there!

§

18/7/2009. It has been repeatedly assured that the problem of the cooling of the bay is as well as already solved because the regasification plant and the new thermoelectric power plant of Lucchini will exchange the cold and hot waters respectively. The paper poses the GasNatural manager Narcis de Carreras, visiting Dipiazza this question: "And the collaboration with Lucchini Energy?" Answer: "Everything is to be defined. We had no relation with the group of Brescia. To entertain now on technical aspects would be inappropriate”

See below: From the blog of the Mayor (3/8/2009)

§

Luca Visentini, UIL Secretary (18/7/2009): "We are very pleased with the green light arrived from the government. We are not satisfied instead of the long times of the Municipality compared with the necessary time to pave the way to the project"

The taliban of the project.

§
1/8/2009 (Il Piccolo and blog of Fabio Omero). From the PD agenda in the City Council to ensure the regasification plant: "We need an authoritative and unified approach to all local institutions in this direction, to be implemented with the involvement of scientific expertise available in the territory."

"Scientific expertise" provided it is favourable to the regasification terminal project.

§
Dipiazza (3/8/2009) from the blog “The mayor answers” in the Web page of the Municipality of Triest: "it is absolutely certain the condition that the regasification terminal implies the conversion of the Ferriera from Servola”

Certain? based on what? In the Memorandum of Understanding of 20 April 20th 2009 among the city, the county, the region and Lucchini, there is not any.

§
Dipiazza (20/8/2009): "If Krško blows up we probably have a few million dead, if my regasification terminal blows up we will just hear a bang”.

The "bang" of "his" regasification terminal will directly hit Servola, Valmaura, Muggia ... (what about a little word to Tondo, Scajola, Frattini, Menia, etc.. that want to double the power of Krško with Italian help?)

A regasification plant recently built in California (note the absence of towns around)

17.-

To support the protest.

The regasification terminal of Trieste-Zaule can be stopped, but we need human and material resources, especially to support a legal action (that has elevated costs).

Who shares this goal can contribute financially, with donations on c.c.p. n. 12559340 to the name of: Legambiente Trieste – Circolo verdazzurro, via Donizetti 5/a, 34133 Trieste (for on-line donations the IBAN code is: IT 64 I076 0102 2000 0012559340), always stating the reason: “donazione pro spese azioni legali contro rigassificatore Trieste-Zaule”

Occorre naturalmente anche la collaborazione di volontari per tutte le azioni (ad es. distribuzione di questo numero di Konrad in banchetti informativi, ecc.) utili allo scopo.

We need volunteers for all activities (eg. Distribution of this number of Konrad in information booths, etc..) to help to reach the goal. If you can spare some time to help, please contact us.:

WWF – via Rittmeyer 6, 34132 Trieste, tel. 040 360551, e-mail: wwfts@libero.it
Legambiente – via Donizetti 5/a, 34133 Trieste, tel. 040 577013, e-mail: info@legambientetrieste.it

For more information
www.wwf.it/friuliveneziagiulia (sezione “documenti”)
www.legambientetrieste.it (sezione “documenti”)
http//amici.golfo.ts.it.googlepages.com
