<u>The Strategy of International Project Financing</u>

Terrasia Petroleum Products Pipeline Ltd.

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Chiang Lai is a restful, bucolic place, perfect for a company offsite meeting devoted to drafting a Corporate Plan and major investment Appropriation Request (AR). However, for Val Stephens and Roy Wryland, CFO and Managing Director respectively of American Terrasia (AT), all sense of a restful retreat had been replaced by an intense and brooding tension. Any minute the phone was due to ring. When it did, AT would find out whether its $950 M major refinery expansion would have a companion distribution system that would provide the project with indispensable channels to market.

Some 600 kilometers south, Art Forrester sat in office awaiting the same phone call. As CFO of Scallop Petroleum Terrasia, Art had relentlessly promoted the idea of Scallop winning the right to build a refinery in that country. Art's campaign had seemed to pay off in 1990. In April of that year, the Terrasian Ministry of Industry proclaimed Scallop to be the winner of the mandate to build the country's fourth refinery. This right had been intensively sought by both Scallop and Arntex Oil. Scallop's elation at its appointment had proved to be short-lived. Arntex lobbied its political contacts non-stop. Their efforts had resulted in the Terrasian prime minister announcing that Arntex would be granted rights to build a fifth refinery. Arntex had eagerly accepted the award. A final complication for Scallop emerged when the very same Industry Ministry that had favored Scallop in the first place granted AT the right to carry out a major expansion of its existing refinery.

Thus Art had seen Scallop's strategic victory diluted by the prospect of intensified competition from two other refineries. Still, Terrasia's economic growth had progressed in so spectacular a fashion, it looked possible that all the refining capacity might be needed. This 'best case' scenario depended however on the capacity coming on stream in a staged fashion over a somewhat extended period of 6 years. For Scallop, the phone call in question held the potential to disturb that needed, gradual schedule of development.

Two months earlier, the Terrasia Petroleum Authority (TPA) had announced plans for a major product pipeline to be built. The pipeline would connect the countries new and expanded refineries in the south with new distribution terminals to be built just north of Bagoda, the capitol city and biggest oil market. TPA was an unusual entity. It owned significant oil assets and was a partner of the foreign oil companies in their exploration and producing ventures. TPA also marketed petroleum products in competition with the likes of Scallop, Arntex and AT. Finally, TPA was used by the government to implement national energy policy. It was in this latter capacity that TPA had made its announcement about the pipeline. TPA took pains to emphasize that the pipeline would be a priority 'national project'. The existing major oil companies were put on notice to expect further word from TPA on the pipeline's specific route and their respective participations.

The Phone Call

"Thank you for your interest in Terrasia Petroleum Product Pipeline Ltd. (Teppline). After consultations with the Ministry of Industry and the Cabinet, we are pleased to be able to advise you as to the plans for this important 'National Project' and your role in bringing it into existence.

TPA will form the company immediately under the corporate law of Terrasia. Shares will then be offered to the respective oil companies already enjoying licenses to market petroleum products in this country.

Teppline is to be a multi-petroleum product pipeline to be built in two stages. Phase 1 will be a 32" line over a 200 km route. The Phase 1 line will connect the AT and Teroil refineries at Samara with two new industry distribution terminals to be constructed in the Northern suburbs of Bagoda. Phase 2 will consist of a 20" line of 90 km to connect the new Scallop and Arntex refineries in Maah Phut with the Phase 1 pipeline terminus in Samara.

Phase 1 is to begin immediately with a target date for completion of January 1995. Assuming Phase 1 completes on schedule, Phase 2 could be concluded by September 1997. The decision to proceed with Phase 2 will be made by the company, based upon his progress of Phase 1 and by majority vote of the stockholders of the company.

Preliminary engineering studies estimate that the Phase 1 pipeline, terminals and associated working capital will require an investment of $US 400M. Preliminary project economics (Attachment 1) indicate that investors will earn a 10% return on the Phase 1 line. Expectations are that this return will be enhanced by the subsequent construction of the Phase 2 extension.

In order to help ensure the commercial viability of the pipeline and the environmental improvements sought by the government, Ministry of Industry expects to implement future restrictions on the use of existing petroleum terminals located in downtown Bagoda. Companies currently relying on supplying these terminals by marine vessels and on sending large tank truck fleets to these sites to load product are advised to anticipate that the Ministry is targeting a significant reduction in the volume of both ships and trucks entering these terminals. Teppline's pipeline and new terminals are intended to provide alternate logistics to these current arrangements.

The exact level of restrictions on traffic into downtown Bagoda terminals will be determined by the Ministry of Industry after appropriate studies are concluded by Teppline.

The Ministry of Industry plans to allocate shares in Teppline on the following basis:

COMPANY	% OWNERSHIP
TPA	25.6
SCALLOP	15.0
AT	15.0
ARNTEX	15.0
D8	10.0
UKP	10.0
TEROIL	5.0
TURBO	4.4
TOTAL	100.0

While company subscription to their share allocations is not mandatory, the Ministry of Industry has indicated that, as Teppline is a 'National Project', a company's failure to purchase its share allocation will be considered a fundamental signal of disinterest in the development of the Terrasian petroleum market. The Ministry will duly take this signal into account regarding future licenses for expansion of existing facilities, eligibility for auctions of new opportunities to explore for oil or natural gas, and the renewal of current marketing licenses for existing service station chain.

Mr. Suthat Hengrassmee, current marketing Vice President of TPA, has been appointed President of Teppline. He will contact each of the listed company Managing Directors in the next week to discuss subscription to its share allocation, the formation of a Company Board of Directors, the formation of a Finance Committee, and the contribution of seconded personnel to form the executive management of the Company.

Again, the Ministry and TPA wish to thank your for your attention and your interest in Teppline."

The Reaction at AT

Roy and Val let out a sigh of relief. In many ways, the phone call could not have gone better. The Ministry and TPA were seriously organizing Teppline and launching it on a schedule that would allow the system to be available to AT upon the completion of its refinery expansion. Roy expected the Samara facility to complete its project by May 1995.

There were additional reasons for AT to be satisfied. AT was enthusiastic about the refinery expansion project because they anticipated it would become the lowest cost facility in Terrasia. AT's existing refinery was a simple 75 kbd hydroskimming facility that had been inexpensively constructed between 1970 and 1986. AT's total capital employed in the refinery amounted to $US 75 M, including working capital. Even with a $US 900 M expansion, AT would have less than $US I G invested in its facility. By way of comparison, Scallop and Arntex were constructing ‘grassroots’ facilities at costs approaching $US 2 G. Moreover, the Scallop and Arntex facilities would be located further away from the primary Bagoda market. Attachment 2 provides a comparison of the respective refining facilities. AT’s only worry had been logistics. Its own downtown Bagoda terminal was smaller than both Scallop and Arntex’ comparable plants, and could not handle all the volume from an expanded AT refinery. Scallop and Arntex conceivably could ship all of their refinery’s production by marine vessel to their existing facilities. AT’s alternative logistical plan was to ship the expansion’s production by truck directly out of the Samara facility. Given the higher cost of trucking versus marine shipping and the time lost by moving product over ultra-congested highways, AT faced the prospect of seeing most if not all of its refining cost advantage lost through inferior logistics.

This concern now appeared alleviated. Indeed, Teppline held the promise of adding a potential logistical advantage to AT’s already superior refining cost position. With Teppline, AT’s Samara facility would be directly connected by low cost pipeline to new distribution terminals. Samara was closer than Maah Phut to Bagoda in the base case. Both the Samara expansion and the pipeline would be completed 1-2 years ahead of the Scallop and Arntex facilities. Scallop and Arntex could also not count on the Phase 2 pipeline extension, which would have to be voted on by the Teppline shareholders; they would however have to worry about Ministry of Industry restrictions on access to their downtown Bagoda terminals. All in all, AT saw the prospect Teppline to complement the cost advantage it believed would be captured by the Samara refinery expansion.

There were however a few disappointing messages in the TPA phone call. For one thing, AT was disappointed in the small equity share allocation. By its own calculations, AT was likely to ship 45-55% of all pipeline volumes during Phase 1 and 35% once Phase 2 was connected. A second concern was the complexity of the Teppline ownership. Many small marketing companies with no interest in refining were included in the project. Would these companies prove enthusiastic partners and investors? Roy and Val had their doubts. They also anticipated that Scallop and Arntex would be less than enthusiastic about the arrangements. Potentially these companies might all resist funding the venture with all shareholder money.

Finally, the 10% return did not clear AT’s normal ‘hurdle rate’. Roy and Val would either have to negotiate and improvement in project economics or obtain a project approval exception at headquarters.

However, these were tomorrow’s concerns. For now, AT could enjoy the quiet relief that its major investment at Samara was not likely to be logistically handicapped or ‘stranded’.

The view at Scallop

Across town the mood was somber. Art was deeply disappointed that plans for a Teppline extension to Maah Phut were so uncertain.

"Not only is Teppline not committed to building the extension from the outset, but the matter must be put to a vote where our competitors will have all manner of reasons for delaying or canceling the extension. How is Scallop supposed to plan logistics for a grassroots refinery on this basis? Yet, we are expected to participate fully from the outset in building the line that provides the logistical solution our competitor desperately needs. Seldom have I seen a less level playing field laid out by a government intent on stimulating cooperation with the private sector."

Art and his colleagues discussed the matter in more detail and noted a number of other important substantive points:

- The pipeline-specific project economics were not robust from a sponsor perspective. A 10% return on invested capital would be marginal within Scallops portfolio of investment opportunities, and could only be assured of approval at headquarters if there were implied credits for other projects and/or a compelling strategic rationale.

- It was not crystal clear that the shipping costs associated with Teppline would be advantageous for Scallop. Estimated costs for water transportation from Maah Phut to the downtown Bagoda terminal were about $US.45/barrel. Costs to deliver product from ex-terminal to northern Bagoda were on the order of $US.15-.35/b depending upon destination. The pipeline project's economics were based upon tariffs of $US.90/b for deliveries just from Samara to North Bagoda.

- Finally, it was noted that the pipeline consortium would include a significant portion of equity holders who would see little or no benefit from the project, at least initially. These included Arntex (15%) whose position resembled Scallops, UKP (10%), D8 (10%), and TURBO (4.4%). Together with Scallop's stake, these participants represented 54.4% of Teppline's proposed equity.

The consensus of the group was that TPA had misconceived the project's design. A major restructuring would need to be accomplished before Scallop could become supportive.

As the meeting among Art and his finance team was ending, Art's secretary brought word that Mr. Suthat Hengrassmee's office had called a meeting of the Company participants for the following Tuesday.

<u>The Meeting at Teppline's new offices</u>

Mr. Suthat opened the meeting with an overview of his plans for the Company and the pipeline's construction:

“This project is going to commence development activities immediately. The Terrasian government has recognized at the highest levels that the Eastern Seaboard industrial zone, which includes all existing and new refineries, needs a new, modern distribution system. Both the national and the municipal Bagoda governments insist that the volume of traffic through the downtown marine terminals must be curtailed. For these reasons, Terrasia had declared Teppline to be a ‘National Project’. This means it will receive the highest priority from the government in terms of resources and as needed supportive regulation.

Your information packages contain studies prepared by Ministry of Industry with the assistance of Daniel Elder Petroleum Consultants (DEPC) and the investment banking firm of Swiss Bank Finance Company (SBFC). The Phase 1 Teppline project consists of the pipeline and pumping stations, two bulk plant distribution centers north of Bagoda, and a connection to the Bagoda airport; including working capital and capitalized interest during construction, the project is estimated to cost some $US 400 M and will take about 30 months to complete. This schedule puts mechanical completion for the project in 4Q 1993 and full start-up in 1Q 1994. A 15% contingency is included in this cost estimate.

The DEPC studies project that approximately 220 kbd of oil products should be moved initially via the Teppline Phase 1 pipeline. This volume should grow by 5% per year. For reasons of conservatism, project economics reflect only 180 kbd initially move through the line - slightly more than 80% of the available volumes. Pipeline throughput then grows annually until it reaches 250 kbd, where it is assumed to stabilize. No volumes are assumed related to further refinery expansions by AT and Teroil and no Phase 2 volumes are reflected. Obviously, these possibilities create further upside for the Phase 1 trunkline.

Assuming these volumes and pipeline tariffs in the range of $US .80-.90/b, Phase 1 delivers a 10% IRR over a 20 year life. Residual value is taken to be 25% of original cost, which also is very conservative.

In terms of financing, SBFC is recommending the following:

- *Project financing be used to fund 60% of the project costs*
- *Sponsors will provide their pro rata share of the 40% equity; by way of illustration, this would imply slightly more that a $US 40 M equity investment for TPA.’s ~25% stake in the project*
- *Sponsors will also provide their pro rata share of necessary completion guarantees*
- *Finally, Sponsors will nominate volume for the pipeline one year in advance and commit that 80% of the nominated volumes will be on a ‘ship or pay’ basis*

Based upon these principles, SBFC is confident that Teppline can raise the needed project financing in the Asian $US market.

This completes my overview of the Teppline project. I would now like to go around the table and hear comments from all of you prospective partners."

Roy Wryland spoke first. *"This looks to be an outstanding project and we applaud both the Ministry and TPA for major progress in developing a path forward. AT is totally supportive. Our only comments would be that first, the project return should be raised to at least 12%. Teppline's project economics should be robust so that the company can readily 'stand on its own'. Second, AT feels that project financing is not necessary for this project. The listed prospective partners all have the financial wherewithal to fund their full share of project costs. To assure timely completion of the pipeline, AT favors avoiding the time consuming and expensive project financing process by having each partner simply provide his share of project costs. This would also do away with any need for volume commitments, leaving each partner with flexibility to decide each year on volumes to ship via Teppline. Finally, AT would note the disparity among its likely shipments via Teppline and our nominated 15% equity stake. A higher percentage ownership for AT should perhaps be considered."*

Art Forrester spoke next. *"The project as currently conceived has major issues. Phase 1 serves the interests of some consortium members, who are competitors, more than others. That might be acceptable if the interests of the other members were adequately addressed in Phase 2. Unfortunately, this is not the case. There are no commitments to carry out Phase 2, nor even meaningful assurances. For Scallop, this looks very much like contributing to the viability of competitors with no certainty of compensating consideration.*

On top of these strategic concerns, the project economics appear suspect. Even granting the assumptions used in DEPC's study, a 10% return on total capital will not meet the minimum required return on investment for the Scallop group. In all likelihood, the return will be lower unless those who will most use the pipeline are prepared to commit their volumes unequivocally and perhaps pay a higher tariff than was used in the DEPC projections.

Finally, Scallop would assert that for Teppline to be successful, it must offer shippers the lowest cost transportation option. It is not at all clear that Tappline intends to do this or is capable of doing it. At the invitation of the Ministry of Industry, Scallop develop a $US 2G proposal for a new refinery at Maah Phut. We submitted that proposal to the Ministry based upon an assumed $US .45/b cost to deliver product to downtown Bagoda via marine transport. Scallop's proposal was approved by the Ministry. Now the Ministry want support for a project which will charge users $US .90/b just to ship from Samara to Bagoda. Again, we do not think that Scallop's Board will support a project which worsens rather than improves the competitive position of a major new investment."

Art's forceful critique seemed to embolden spokesmen for the other consortium members. The UKP representative indicated that, while they supported Teppline in principle, Phase 1 was not strategic to the company's business plan. Consequently, there was doubt as to whether the project could obtain headquarters approval. He went on to say that properly structured project financing could improve chances for approval. By this he meant that a company like UKP could only be expected to bring its equity interest to the financing. Any guarantees for completion or thruput would have to come from the major players whose interests were being primarily served in Phase 1.

Similar sentiments were expressed by spokesmen for D8 and TURBO. Only Teroil spoke in favor of the project as outlined by Suthat Hengrassmee.

Mr. Suthat then responded: *"I would ask that when you communicate with your parent company headquarters about this project, please be sure to include the following points. First, all companies operating in the petroleum product market do so at the pleasure of the Terrasian government. It issues marketing licenses which must be renewed every five years. While these renewals have generally been routine in the past, there is an underlying principle that the companies operating in this market are generally supportive of the government's plans to develop the market. Ministry of Industry has made a concerted effort to open the market and allow more companies the opportunity to compete here. It will examine with interest the attitudes of the new companies who have eagerly responded to the government's opening of the market.*

Second, companies operating in the market need to take account of social conditions. The level of traffic and pollution in downtown Bagoda is, as you well know, unsustainable. The number of oil trucks clogging the roads and emitting diesel fumes simply must be reduced. Companies operating in this market must factor these environmental considerations into their plans.

Third, the companies building new refineries can well understand that Phase 1 of Teppline must be appropriated and built before Phase 2 can be considered. Phase 2 is, as you would say, an incremental project to be judged on its own merits. That said, Scallop, Arntex and the new marketers should note the obvious. The same logic which the government is bringing to Phase 1 will apply to Phase 2 – that is the same desire to reduce traffic and pollution, to have a modern distribution system that can be efficiently expanded, these same driving forces will apply when it comes time to consider Phase 2. In fact, the logic for Phase 2 will be even more compelling because Phase 1 will then be in existence. Expansion projects typically show better economics than the initial 'platform' project. It is however, impossible at this time to foresee all of the conditions which will prevail when Phase 2 is ripe for consideration. We cannot now know the actual completion timing for the new refineries, the companies true alternative transport costs, their marketing and distribution needs and the levels of traffic and congestion surrounding the downtown terminals. Conceivably, the government may just decide that phase out and shutdown of those terminals is required. All these assumptions and more will need to be better defined to follow sound investment processes.

Finally, basic principles of equity must shape the project, including its financing. All partners must contribute their fair share to enable Teppline to build and operate its *facilities. The strategy of project financing was developed by SBFC as a way to balance the respective interests and capabilities of the prospective partners. Each partner must carry its fair share of the load. The project finance strategy does this, balancing the use of external borrowing to limit cash calls on the partners with the necessity of each partner contributing its share of needed guarantees and volume commitments. I urge each of you to read the SBFC financing report attached to your papers (Attachment 2). You will find it fair, balanced and doable.*

The Ministry and Teppline are not opposed to making adjustments in project details, so long as these support the stated objectives and promote cohesion among the prospective partners.

After you have digested these points and the referenced studies and communicated with you home offices, we will review the positions of the prospective partners at a meeting here in one week's time. If your firm is not interested in participating in Teppline, we need to know now so that your share allocation can be redistributed."

With this, the meeting adjourned. Roy, Val and Art let their respective teams from the room and returned to their offices.

Subsequent Debriefs

Roy and Val slumped into chairs in Roy's office and Roy began to speak. "*Pipeline projects always seem to be this way. Partners never want to make agreement easy. Negotiations drag and drag on until some final 'in or out' showdown. That prospect doesn't bode well for our interests. Plus we have almost certain problems getting the project approved. The basic economics are marginal enough. Prospective 'carries' of weaker partners or overfinancing via higher Phase 1 tariffs or volume commitments in excess of our equity will only make things worse. We will need to conceive of a strategy that drives the financing forward without making the economics worse."*

Art led his finance team into a conference room. "*The government is trying to cram this project down our throats. Still, we cannot take lightly the scarcely veiled threats to retaliate for non-cooperation. We need a strategy which will hurt our competitors without incurring the ultimate wrath of Ministry of Industry and which maintains an option for a pipeline to our refinery at completion. The key to this strategy may be in how we approach the financing. Let's think through our tactics on funding before we decide what to communicate back to headquarters."*

ATTACHMENT 1

<u>Terrasia Petroleum Products Pipeline Ltd</u>.
Report on Preliminary Project Economics – May 1991
Daniel Elder Petroleum Consultants

Project Rationale and Description

Ministry of Industry has asked Daniel Elder Petroleum Consultants (DEPC) to provide preliminary economics for a proposed Phase 1 multi-petroleum product pipeline system. In order for prospective investors to consider these economics, a project description and rationale must also be provided.

Teppline Phase 1 is to connect Terrasia's existing refineries to the Bagoda International Airport and two new distribution depots in North Bagoda. Terrasia presently has 3 refineries located within a 90 km radius south of Bagoda. Two of these refineries are at Samara and are owned by Teroil (150 kbd) and American Terrasia (AT-75 kbd) respectively. AT will be expanding its refinery to 145 kbd over the next three years. The third refinery, Bangcher (75 kbd), is located just south of Bagoda. Bangcher is owned by the Terrasia Petroleum Authority (TPA). Teppline's plan is to commence a pipeline at Samara and construct a 32" buried trunk line running north along the coast and then northwest until it terminates in the Bagoda suburb of North Lampchabang. Three 15" buried connecting lines will comprise the remainder of the system; one will connect the Bangcher refinery, one the airport, and the third will extend the trunk line to a new terminal at Rangome, 50 km north of Bagoda. Three pumping stations will complete the system, one at Samara, one at the junction of the trunk line and the airport feeder line and the third at Lampchabang.

Teppline will build, own and operate all Phase 1 system facilities consisting of 3 pump stations, 4 pipelines, and 2 bulk plant terminals as well as the land on which these facilities sit. Necessary right of ways will be obtained from Ministry of Industry and Teppline has already begun contract negotiations for the land sites for the pump stations and terminals.

Experience around the world has shown that pipeline transportation is consistently the cheapest and most environmentally sound way to transport petroleum products. Pipelines are especially economic where demand for petroleum products is expect to grow substantially. Once the basic system is built, pipeline thruput can be readily increased through the application of sophisticated, computerized batching systems, debottlenecking compressor capacity at pump stations or in the final analysis adding new pump stations. Thus, pipeline incremental economics usually show high returns. Teppline should be no different than other projects and may in fact be a superior economic venture due to the high projected growth in Terrasian petroleum product demand (~10% growth p.a. over last 5 years). Teppline also anticipates future growth in the market by positioning bulk plants to serve the suburbs and outskirts of Bagoda. The Phase 2 extension line to Maah Phut will serve to match growing demand outside of the core Bagoda market with new refining capacity located 140 km south of the capitol.

Environmentally, pipeline transport is clearly superior to other modes of delivery. Buried pipelines find it easy to contain and remediate the rare spills. More important, no above ground transport is involved, effectively eliminating any contribution to traffic congestion or atmospheric emissions. Thus, pipelines such as Teppline brilliantly reconcile economic growth with the environment. Project economics improve with growth while traffic and air quality remain unaffected. Marine transport illustrates the contrast with above ground modes of product movement. Tanker shipments are in bulk and often show low unit costs due to lower capital intensity. However, tanker spills affect marine waterways and surrounding shorelines. Tankers are prone to accidents which contribute to both pollution and environmental degradation. Moreover, tankers usually dock at ports located at a distance from petroleum markets. Thus, tank truck fleets must shuttle products from the dock to customers residing in all directions. For Bagoda, this now means the equivalent of 500 truck round trips per day between the downtown terminals and customers in city and suburbs. That figure is projected to double in the next 5 years if no alternative transport system is built. Ministry of Industry has determined that such growth comes at unacceptable environmental cost, and in fact the Ministry is targeting a reduction in tank truck roundtrips to 300 per day by year 2000.

Thus, Teppline's biggest economic challenge is the construction of the initial system. Incremental growth thereafter should be relatively easy to justify.

DEPC has thus determined that Teppline Phase 1 should be crafted to achieve a modest but attractive 10% Internal Rate of Return. Targeting this level of return should be consistent with setting tariffs that attract volumes to ship via the line. It also is consistent with the low operating risk which this pipeline will present upon completion. Founding investors in the project will be assured of the following benefits:

- An acceptable return on capital with low risk
- Likely higher returns on incremental system expansions
- Strategic transport alternatives to their existing distribution modes
- Solutions to future environmental issues which otherwise would pose future costs, such as terminal closings and/or environmental remediation
- Assured, low cost transportation for their future manufacturing projects and a competitive cost advantage versus non-participants in Teppline

Preliminary Project Economics

DEPC, working with independent consultants, has d