16A-1 UNIT VEHICLE OPERATING COST CALCULATION

16A-1   Unit Vehicle Operating Cost

(1) General

The estimation of vehicle operating cost is based on the method used in previous similar studies on toll road projects in Indonesia.

All cost components (i.e. unit prices of vehicle, tyre, fuel/oil and etc.) were up-dated according to the latest informations collected at Jakarta city for this study.

(2) Representative Vehicles

Since a major factor of vehicle operating costs is the cost and type of vehicles, it is necessary to establish representative vehicles for the vehicle categories of the traffic assignment.

The vehicle categories (vehicles with over 4-wheels) are assumed to be passenger car, pick-up, bus and truck, which respectively consist of sedan and van; pick-up; minibus (public), medium bus and large bus; and small truck, medium truck and large truck.

The representative vehicles for each category are discussed below and their specifications are summarized in Table 16A.1

Table 16A.1　Specification of Representative Vehicles

Specification	1) Sedan	2) Van (Private)	3) Pick-up	4) Minibus (Public)	5) Medium Bus	6) Large Bus	7) Small Truck	8) Medium Truck	9) Large Truck
	Toyota Corolla 1300	Toyota Kijang Minibus (SSX)	Toyota Kijang Pick-up (LONG STD)	Toyota Kijang Minibus (SX)	Mitsubishi Colt FE114	Mercedes Benz OH308	Mitsubishi Colt FE114	Mitsubishi Fuso FM517H	Mitsubishi Fuso FN517KRM
1) Length (m)	4.270	4.130	4.140	4.110	5.805	10.310	5.805	7.535	8.260
2) Width (m)	1.685	1.640	1.620	1.620	1.870	2.500	1.870	2.385	2.385
3) Height (m)	1.380	1.790	1.780	1.815	2.045	-	2.045	2.710	2.725
4) Number of Axles	2	2	2	2	2	2	2.	2	3
5) Number of Wheels	4	4	4	4	6	6	6	6	10
6) Weight (kg)	945	1,220	1,040	1,190	-	-	1,865	3,970	5,070
7) Capacity (persons)	4	4	2	10 + 1	24 + 1	53 + 1	3	3	3
8) Load Capacity (ton)	-	-	-	-	-	-	3.5 - 5.0	7.0 - 12.0	20.0 - 25.0
9) Tyre Size	175 x 13	175 x 13	6.00 x 13	6.00 x 13	7.00 x 16	9.00 x 20	7.00 x 16	9.00 x 20	9.00 x 20
10) Engine Capacity (cc)	1,296	1,486	1,486	1,486	3,298	5,958	3,298	7,545	7,545
11) Number of Cylinders	4	4	4	4	4	6	4	6	6
12) Gross Horse Power	72 HP	72 HP	72 HP	72 HP	100 PS	184 HP	100 PS	190 PS	190 PS
13) Fuel Type	Gasoline	Gasoline	Gasoline	Gasoline	Diesel	Diesel	Diesel	Diesel	Diesel

1) Passenger Car

The recent sales data of passenger car by model/maker in the area of Jakarta city are not available.

According to the interview to some car distributors/dealers in Jakarta, the popular model of sedan in the area of Jakarta is judged to be the Toyota Corolla 1300. Accordingly, the Toyota Corolla 1300 was set up as the representative sedan. (The new model of corolla series is now 1600cc class, however for this analysis 1300cc class is still applied).

In Jakarta, many vans of minibus type are commonly used as sedan substitutes. After interviewing car distributors/dealers, the Toyota Kijang Minibus was selected as the representative private van.

2) Pick-up

The Toyota Kijang Pick-up was selected as the representative pick-up.

3) Bus

According to the observation in some bus terminals and the interview to car dealers, the Toyota Kijang Minibus (public bus mode), the Mitsubishi Colt FE 114 (public bus mode) and the Mercedes Benz OH 308 were selected as the representative vehicles of the minibus, medium bus and large bus respectively.

4) Truck

The Mitsubishi Colt FE 114 and the Mitsubishi Fuso FM 517H were selected as the representative vehicles of the small truck and medium truck. As the representative vehicle of the large truck with more 3-axles truck, the Mitsubishi Fuso FN 517 KRM was selected.

In the traffic count survey conducted by the Study Team in June 1993, the types of small truck and medium truck were counted together, therefore the share ratio of both types of trucks is unknown. Consequently, for the estimation of unit vehicle operating cost, a combined vehicle type of small truck and medium truck is assumed as a small/medium truck, and an average value of unit price of these two trucks was applied for cost calculation.

(3) Unit Prices of Operating Cost Components

The financial and economic unit prices of the major cost components were up-dated with 1994 prices collected in Jakarta for this study. The tax and duties structures utilized in estimating the economic unit prices

incorporate the factor of luxury taxes. The financial and economic unit prices are discussed below and summarized in Table 16A.2.

1) Vehicles

The current 1994 market prices for vehicles were obtained through interview surveys with the major car distributors/dealers in Jakarta.

In Indonesia, a 100% import duty on the CIF (cost, insurance and freight) value of CKD (complete knocked down) parts is imposed on passenger car, while not applied for commercial vehicles.

After adjusting for transfer payments such as the PPN tax and value added tax (VAT), the tax ratios on the market prices of vehicle on roads were estimated at 56% and 23% for passenger car and commercial vehicles respectively (refer to Table 16A.3).

2) Tyres

The market prices of tyres for the various vehicle types were up-dated to 1994 prices (refer to Table 16A.2), and a total tax ratio was assumed at 19.4% of the actual market sales prices for determining the economic unit prices.

3) Fuels

For this economic analysis, it is assumed that a fuel subsidy is not applied for the gasoline and diesel fuels. Therefore, by adjusting for a 10% value added tax, the economic prices of gasoline and diesel fuel were obtained.

4) Wage Rates

The 1991 wage rates of transport workers, i.e. drivers, assistant drivers, conductors and mechanics in Jakarta were obtained from the Central Bureau of Statistic (Upah Buruh Menurut Jenis Pekerjaan). The estimated annual average growth rate of consumer price index in Jakarta for the period 1991 to 1994 (about 7% per annum) was adopted to estimate the wage rates in 1994. Considering the wage levels of transport workers, their wages are assumed not to be subject to any income taxes. Therefore, the economic values are estimated to be equivalent to their market wage rates (Refer to Table 16A.2).

5) Interest Costs

A rate of 15% per annum was used. The interest costs in relation to speed were calculated from the annual running speed.

Table 16A.2   Unit Price of Vehicle Operating Cost Component
(Constant 1994 Prices)

(Unit : Rp.)

PRICE OF VEHICLES			Financial Price	Economic Price
Sedan	:	Toyota Corolla 1300	67,028,000	29,492,000
Van (Private)	:	Toyota Kijang Minibus	31,550,000	24,294,000
Pick-up	:	Toyota Kijang Pick-up	23,100,000	17,787,000
Minibus (Public)	:	Toyota Kijang Minibus	27,200,000	20,944,000
Medium Bus	:	Mitsubishi Colt FE114	58,000,000	44,660,000
Large Bus	:	Mercedes Benz OH308	125,000,000	96,250,000
Small Truck	:	Mitsubishi Colt FE114	48,500,000	37,345,000
Medium Truck	:	Mitsubishi Fuso FM517H	87,500,000	67,375,000
Large Truck	:	Mitsubishi Fuso FN517KRM	108,500,000	83,545,000

Note : Depreciable value of vehicle = 90% of price

(Unit : Rp.)

PRICE OF ONE SET OF TYRES/TUBES			Financial Price	Economic Price
Sedan	:	Toyota Corolla 1300	116,000	93,496
Van (Private)	:	Toyota Kijang Minibus	116,000	93,496
Pick-up	:	Toyota Kijang Pick-up	85,400	68,832
Minibus (Public)	:	Toyota Kijang Minibus	85,400	68,832
Medium Bus	:	Mitsubishi Colt FE114	170,000	137,020
Large Bus	:	Mercedes Benz OH308	310,000	249,860
Small Truck	:	Mitsubishi Colt FE114	170,000	137,020
Medium Truck	:	Mitsubishi Fuso FM517H	310,000	249,860
Large Truck	:	Mitsubishi Fuso FN517KRM	310,000	249,860

(Unit : Rp.)

PRICE OF FUEL/ENGINE OIL (PER LITER)	Financial Price	Economic Price
Gasoline	700	636
Diesel Fuel	380	345
Engine Oil for Sedan	4,500	4,091
Engine Oil for Gasoline Minibus/Pick-up	3,500	3,182
Engine Oil for Diesel Truck/Bus	4,000	3,636

(Unit : Rp.)

WAGE RATES (PER HOUR)	Financial Price	Economic Price
Mechanics	980	980
Bus Driver	1,577	1,577
Truck Driver	1,322	1,322
Bus Conductor	638	638
Truck Assistant	980	980

Table 16A.3 Tax Component of Market Sales Price of Vehicles

<1> Taxes on Passenger Car

			Costs	Taxes
(1)	CIF Price of CKD Parts		1.0000 A	
(2)	Import Duty	(1) x 100%	1.0000 A	1.0000 A
(3)	Assembly and Other Costs		0.7000 A	
(4)	PPN Import	((1)+(2)+(3))x35%	0.9450 A	0.9450 A
(5)	VAT	((1)+(2)+(3))x10%	0.2700 A	0.2700 A
(6)	Dealer/Distributor Price	Sum ((1)-(5))	3.9150 A	
(7)	Dealer Commision	(6)x10%	0.3915 A	
(8)	Sales Price	(6)+(7)	4.3065 A	
(9)	Registration Fee	(8)x10%	0.4307 A	0.4307 A
(10)	Total Price	(8)+(9)	4.7372A	2.6457 A

Tax Ratio = 2.6457 / 4.7372 = 56%

<2> Taxes on Commercial Vehicles

			Costs	Taxes
(1)	CIF Price of CKD Parts		1.0000 A	
(2)	Import Duty		0.0000 A	0.0000 A
(3)	Assembly and Other Costs		4.5000 A	
(4)	PPN Import	((1)+(2)+(3))x10%	0.5500 A	0.5500 A
(5)	VAT	((1)+(2)+(3))x10%	0.5500 A	0.5500 A
(6)	Dealer/Distributor Price	Sum ((1)-(5))	6.6000 A	
(7)	Dealer Commision	(6)x10%	0.6600 A	
(8)	Sales Price	(6)+(7)	7.2600 A	
(9)	Registration Fee	(8)x10%	0.7260 A	0.7260 A
(10)	Total Price	(8)+(9)	7.9860 A	1.8260 A

Tax Ratio = 1.8260 / 7.9860 = 23%

6) Insurance Costs

The average insurance premiums from the previous study and other studies were reviewed and incorporated into this analysis as below:

Passenger Car and Pick-up : 3.5% of vehicle price
Bus : 4.0% of vehicle price
Truck : 6.0% of vehicle price

The average insured vehicle rate was assumed at 50%, and insurance costs were equated in consideration of the annual running distance by speed.

7) Wages Costs of Crew and Overhead Costs

The average crew size by vehicle type was obtained from field survey result, and their wage costs were derived from their traveling hours equated by average running speed. The overhead costs of commercial vehicles were assumed at 10% of the total of other cost items.

8) Cost Equation of Vehicle Operation Costs

The various operating elements discussed above were individually expressed in terms of a vehicle average running speed, in order that costs at different speeds on a level tangent road could be derived. The equation with a speed variable used in this study are based on those applied in previous similar studies in Indonesia. The equation for vehicle operating costs are shown in Table 16A.4.

(4) Unit Vehicle Operating Cost by Vehicle Type

Based on the cost components and the equations of vehicle operating cost described above, unit vehicle operating costs by peed, by vehicle type in terms of financial and economic prices were calculated. Table 16A.5 shows the unit vehicle operating costs in both financial and economic prices.

The above unit vehicle operating costs were calculated for the eight representative vehicle types described earlier. The costs were then combined into the four vehicle categories of the traffic assignment based upon the vehicle composition rate shown in Table 16A.5.

Table 16A.4 Equations for Vehicle Operating Costs

A) **Equations of Fuel Consumption**

Psg. Car/Pick-up	$Y = 0.03719$	$S*S - 4.19966$	$S + 175.9911$
Mini/Medium Bus	$Y = 0.06846$	$S*S - 8.02987$	$S + 340.6040$
Large Bus	$Y = 0.12292$	$S*S - 13.68742$	$S + 541.0279$
Small/Medium Truck (2-axles)	$Y = 0.06427$	$S*S - 7.06130$	$S + 318.3326$
Large Truck (3-axles)	$Y = 0.11462$	$S*S - 12.85594$	$S + 503.7179$

Where : Y = Fuel consumption (liter/1,000 km)
 S = Running speed (km per hour)
Note) Psg. Car includes Sedan/Van (Private)

B) **Equations of Engine Oil Consumption**

Psg. Car/Pick-up	$Y = 0.00025$	$S*S - 0.02664$	$S + 1.44171$
Mini/Medium Bus	$Y = 0.00057$	$S*S - 0.06130$	$S + 3.31753$
Large Bus	$Y = 0.00130$	$S*S - 0.12968$	$S + 7.06239$
Small/Medium Truck (2-axles)	$Y = 0.00048$	$S*S - 0.05608$	$S + 3.07383$
Large Truck (3-axles)	$Y = 0.00100$	$S*S - 0.11715$	$S + 6.40962$

Where : Y = Engine oil consumption (liter/1,000 km)

C) **Equations of Tyre Wear**

Psg. Car/Pick-up	$Y = (0.0008848\ S - 0.0045333)$
Bus	$Y = (0.0012356\ S - 0.0064667)$
Truck	$Y = (0.0011553\ S - 0.0059333)$

Where : Y = Total tyre wear of vehicle equated as wear of one tyre per 1,000 km

D) **Equations of Maintenance Cost**

(1) Maintenance Cost on Parts

Psg. Car/Pick-up	$Y = (0.0000064\ S + 0.0005567)$
Bus	$Y = (0.0000332\ S + 0.0020891)$
Truck	$Y = (0.0000191\ S + 0.0015400)$

Where : Y = Maintenance parts equated as the depreciable value of the vehicle
 per 1,000 km

(2) Maintenance Hour of Labour

Psg. Car/Pick-up	$Y = (0.00362\ S + 0.36267)$
Bus	$Y = (0.02311\ S + 1.97733)$
Truck	$Y = (0.01511\ S + 1.21200)$

Where : Y = Hours of maintenance labour per 1,000 km

(Table 15.4 Continued)

E) Equations of Depreciation

Psg. Car/Pick-up	Y =	1/(2.500 S + 125)
Bus	Y =	1/(8.756 S + 350)
Truck	Y =	1/(6.129 S + 245)

Where : Y = Depreciation per 1,000 km, equated as the depreciable value of the vehicle

F) Equations of Interest

Psg. Car/Pick-up	Y =	(0.15 x 1000)/(500 S)
Bus	Y =	(0.15 x 1000)/(2571 S)
Truck	Y =	(0.15 x 1000)/(1714 S)

Where : Y = Interest per 1,000 km, equated as one half the value of the vehicles (interest rate = 15% per annum)

G) Equations of Insurance

Psg. Car/Pick-up	Y =	(0.035 x 1000 x 0.5)/(500 S)
Bus	Y =	(0.040 x 1000 x 0.5)/(2500 S)
Truck	Y =	(0.060 x 1000 x 0.5)/(1750 S)

Where : Y = Insurance cost per 1,000 km, equated as one half the value of the vehicles

H) Equations of Travelling Hours for Wages

Bus	Y =	1000/S
Truck	Y =	1000/S

Where : Y = Travelling time per 1,000 km

Average Crew Size per Vehicle:

Minibus (Public)	= Driver :	1.0 ,	Conductor :	0.5
Medium Bus	= Driver :	1.0 ,	Conductor :	1.0
Large Bus	= Driver :	1.0 ,	Conductor :	2.0
Small/Medium Truck (2-axles)	= Driver :	1.0 ,	Assistant :	1.0
Large Truck (3-axles)	= Driver :	1.0 ,	Assistant :	2.0

1) Overhead

Bus	= 10% of subtotal of A) to H) above
Truck	= 10% of subtotal of A) to H) above

Assumption on "Equations for Vehicle Operating Costs"			
Parameters	Psg. Car	Bus	Truck
Average Year-Round Speed (Km/hour)	50	40	40
Average Annual Distance Travelled (Km)	25,000	100,000	70,000
Average Service Life (Years)	10	7	7
Life Time Distance Travelled (Km)	250,000	700,000	490,000

Table 16A.5   1994 Unit Vehicle Operating Costs

Financial Vehicle Operating Costs (Rp./Km)

Speed (Km/ Hour)	Passenger Car		Pick-up	B us			Truck	
	Sedan	Van		Minibus	Medium Bus	Large Bus	Small/ Medium Truck	Large Truck
10	1,667	838	641	655	858	1,567	1,064	1,728
15	1,253	639	492	529	697	1,293	843	1,375
20	1,033	531	410	457	615	1,156	730	1,194
25	893	461	356	410	567	1,075	662	1,085
30	794	412	318	376	536	1,026	617	1,015
35	720	375	289	351	517	996	587	969
40	663	346	267	333	505	980	567	939
45	618	324	250	320	499	974	554	922
50	582	307	237	312	498	977	548	914
55	553	294	227	308	501	987	545	914
60	530	284	220	309	507	1,002	547	920
65	512	278	216	312	516	1,023	552	933
70	498	274	213	319	527	1,049	560	950
75	488	272	214	330	541	1,079	571	972
80	481	273	216	344	558	1,114	584	999
85	477	276	220	360	576	1,152	600	1,029
90	475	281	225	380	597	1,195	618	1,064
95	477	288	233	403	620	1,241	638	1,102
100	480	296	242	429	645	1,291	660	1,144

Economic Vehicle Operating Costs (Rp./Km)

Speed (Km/ Hour)	Passenger Car		Pick-up	B us			Truck	
	Sedan	Van		Minibus	Medium Bus	Large Bus	Small/ Medium Truck	Large Truck
10	782	660	508	583	735	1,307	894	1,440
15	595	505	391	467	590	1,070	704	1,138
20	494	420	327	401	516	949	606	983
25	429	365	284	356	472	878	546	889
30	383	326	254	325	444	833	507	828
35	348	297	231	302	426	806	481	788
40	321	274	213	284	414	790	463	761
45	300	257	199	272	408	783	452	745
50	284	243	189	264	405	783	445	738
55	272	233	181	260	406	790	442	736
60	262	226	176	260	410	801	443	741
65	256	221	173	262	417	818	447	751
70	252	218	172	268	426	838	453	765
75	250	218	173	277	437	863	462	783
80	251	219	175	289	450	891	473	805
85	253	223	179	303	466	923	486	831
90	257	228	185	320	483	958	501	860
95	263	234	192	341	502	997	518	892
100	271	243	201	363	522	1,038	537	927

Table 16A.6   Vehicle Composition Rate

Vehicle Category	Vehicle Type	Composition Rate (%)
Passenger Car	Sedan	86.4
	Van	13.6
Pick-up	Pick-up	100.0
Bus	Minibus	32.1
	Medium Bus	36.6
	Large Bus	31.3
Truck	Small/Medium Truck	84.2
	Large Truck	15.8

Source : Based on the traffic survey results at the several selected locations
conducted by the Study Team in June 1993.

As a result, the weighted average of the unit vehicle operating costs by speed,
by vehicle category in financial and economic prices were obtained as shown in
Table 16A.7.

Table 16A.7   1994 Composite Unit Vehicle Operating Costs

Financial Vehicle Operating Costs (Rp./Km)

Speed (Km/ Hour)	Passenger Car	Pick-up	B u s	Truck
10	1,554	641	1,015	1,169
15	1,169	492	830	927
20	965	410	734	803
25	834	356	676	729
30	742	318	638	680
35	673	289	614	647
40	620	267	598	626
45	578	250	590	612
50	545	237	588	606
55	518	227	591	603
60	497	220	598	606
65	480	216	609	612
70	468	213	624	622
75	459	214	642	634
80	453	216	663	650
85	450	220	687	668
90	449	225	715	688
95	451	233	745	711
100	455	242	778	736

Economic Vehicle Operating Costs (Rp./Km)

Speed (Km/ Hour)	Passenger Car	Pick-up	B u s	Truck
10	765	508	865	980
15	583	391	701	773
20	484	327	615	666
25	420	284	562	600
30	375	254	528	558
35	341	231	505	530
40	315	213	490	510
45	294	199	482	498
50	278	189	478	491
55	267	181	479	488
60	257	176	484	490
65	251	173	493	495
70	247	172	504	502
75	246	173	519	513
80	247	175	536	525
85	249	179	557	541
90	253	185	579	558
95	259	192	605	577
100	267	201	632	599

**16A-2 ESTIMATION OF INDIRECT BENEFIT
OF EAST-WEST AXIS**

Appendix 16A-2   Estimation of Indirect Benefit of East-West Axis

(1) General

The implementation of such a kind of high standard arterial road as East-West Axis would impact the direct influenced area or the corridor, with rapid change in land use towards high potential uses or to high productivity in the land use.

Examining the corridor development to the high productivity land use, the following points are to be considered important. These changes of developments along the East-West Axis are, when compared with the whole development of Jakarta Metropolitan area, whether;

1) Speed-up the expected change of land use,

2) Induced and Complement development change in the whole area; and

3) Having the role of balanced development, as opposed to one-core development, including the dismissing of the square area.

For the estimation of this development added value, the detailed and precise forecast of land use changes of floor area increase by sector are rather complicated and difficult.

Such an economic indirect benefit is to be estimated on the basis of land productivity. However, estimations of land productivity by land use are difficult due to limitation of available data.

So, in this analysis, land values on the basis of land prices are utilized as a substitutional indicator to land productivity.

The changes of land use along the East-West Axis corridor are grasped by road section as a change of land value, and the difference of land value between existing and future is calculated as a development effect.

(2) Estimation of Development Benefit

Development benefit is assumed to be estimated as below:

(Difference of unit land value between existing and future by road section) x (Area of land)

For the estimation of existing/future land value for each road subsection, the condition of land use is utilized as main index. The classification of land use is as below:

- Residential
- Commercial

- Industrial
- Agricultural/Space/Others

a) Existing Land Use

As for the existing land use, the composition rates for each land use are roughly given by road subsection based on the observation of aerial photography and field observation.

b) Existing Unit Land Value

The existing unit land value is assumed to be estimated based on the unit compensation cost by road subsection as the study results of cost estimates due to the difficulties to obtain current land price for the Project area.

For the calculation of existing unit land value, assumed adjustment factors are applied considering probable deviations between compensation cost and current land price. Adjustment factor is assumed basically on the basis of the existing land use as below:

- Agricultural or Space   :   1.5
- Residential outside intra-urban tollway :   2.0
- Residential inside intra-urban tollway   :   2.5
- Industrial   :   2.5

c) Assumption of Existing Level of Development by Road Subsection

The indications about the existing level of development by road subsection are assumed based on the observation of aerial photography and field observation.

The area in which highly developed commercial land use is already dominant is roughly assumed as "Already highly developed commercial area". Similarly, "Already highly developed residential area" is also roughly assumed.

d) Future Land Use Assignment by Road Subsection

Generally, it is expected in future that the existing land along the East-West Axis route will be change to newly developed commercial area and residential area. No more new development for industrial land use is assumed to be expected along the route.

Thus, the assignment of future land use by road subsection are made. For estimation of assignment of future land use by road subsection, the existing land uses in the area and its vicinity and the access condition of other roads are considered.

e) Future Unit Land Value

Based on the interview and data/information from developers in Jakarta, the future unit land value are assumed below:

	(Rp. 1,000/m2)
For newly developed residential area	300 (*)
For newly developed commercial area	450 (*)
For already developed commercial area near central district	1,000 (*)

Note: 1) (*) : Factor of 50% for due costs for development or
                redevelopment is applied to land prices.
        2) Land prices: Based on interview and data/information from   developers in
                Jakarta.

According to the assumed assignment of future land use, each of unit land value are allotted by road subsection.

f) Development Expected Factor

For estimation of development benefit, "development expected factor" is taken into consideration by road subsection as a development potential factor.

The development expected factor is assumed as 0.00 - 0.25 - 0.50 - 1.00, according to the site condition such as the structural conditions of East-West Axis (elevated or not), the existing land use, the existing level of development and the access conditions to other roads.

For example, for area assumed as "already highly developed commercial / residential area", factor of 0.00 is given. The undeveloped area which has a great development potential such as area with agricultural or space land use indicates basically factor of 1.00. According to the degree of determining conditions above-mentioned, factor of 0.25 or 0.50 will be given.

g) Area of Land

The area of land by road subsection is calculated to multiple "road length of subsection" by "distance of influenced area".

The distance of influenced area for this arterial road is assumed to be 50 meter in width for each side along the road (total distance = 50m x 2 = 100m.)

h) Estimation of Development Benefit by Road Subsection

The process and results of estimation by road subsection are shown in Table 16A.8.

(3) Estimation of Development Benefit by Road Section According to Implementation Plan of East-West Axis

The benefits estimated above are recalculated according to the implementation plan of East-West Axis.

a) Annual Realization Progress Factor

The benefit estimated above is assumed to be realized gradually year by year, and third year from starting of operation service is assumed to be 100% of realization.

The progress of realization is assumed as below:

- Starting year of operation service : 30%
- Second year from starting of operation service : 60%
- Third year from starting of operation service : 100%

b) The development benefit by section (Section 1 to 4) of East-West Axis according to the implementation plan are shown in Table 16A.7.

Table 16A-7 Calculated Annual Indirect Benefit by Section of East-West Axis

(Rp. Million)

Year	Sec.1	Sec.2	Sec.3	Sec.4	Total
2000	0.0	0.0	0.0	0.0	0.0
2001	26,190.0	0.0	0.0	0.0	26,190.0
2002	52,380.0	0.0	5,175.0	0.0	57,555.0
2003	87,300.0	0.0	10,350.0	14,231.3	111,881.3
2004	87,300.0	0.0	17,250.0	28,462.5	133,012.5
2005	87,300.0	21,960.0	17,250.0	47,437.5	173,947.5
2006	87,300.0	43,920.0	17,250.0	47,437.5	195,907.5
2007	87,300.0	73,200.0	17,250.0	47,437.5	225,187.5
2008	87,300.0	73,200.0	17,250.0	47,437.5	225,187.5
2009	87,300.0	73,200.0	17,250.0	47,437.5	225,187.5
2010	87,300.0	73,200.0	17,250.0	47,437.5	225,187.5

Table 16A.8   Estimation of Development Benefit of East-West Axis

Sec.	Subsection (Station)	Length (m) (a)	Elevated	Existing Road	Remark	Unit Compensation Cost (Rp.1,000/m2) (1) Incid. Bld. (b)	(2) Only Land (c)	Estm. Existing Landuse (%) (1) Residt.	(2) Comm.	(3) Indst.	(4) Agri./Space/Others	Assumed Future Development – Estimated Existing Level of Development	Assumed Dev. Expected Factor (d)	Estm. Unit Land Value (Existing) Assum. Land Cost Adjust. Factor (e)	Unit Value (Rp.1,000/m2) (f) (c)x(e)	Assum. Unit Land Value (Future Development) Assum. Future Land Use	Assum. Unit Value (Rp.1,000/m2) (g)	Estimated Difference Unit Land Value (Rp.1,000/m2) (h) (g)-(f)	Estimated Development Benefit (Rp. Million) (i) (h)x(d)x(a)x100(m)
1	0+500 1+000	500		None		74	60	50%			50%		1.00	1.5	90	Comm.	450	360	18,000.0
	1+000 1+500	500		None		60	60				100%		1.00	1.5	90	Resid.	300	210	10,500.0
	1+500 2+000	500		None		74	60	50%			50%		0.50	1.5	90	Resid.	300	210	5,250.0
	2+000 2+500	500		None		60	60				100%		1.00	1.5	90	Resid.	300	210	10,500.0
	2+500 3+000	500		None		74	60				100%		1.00	1.5	90	Resid.	300	210	10,500.0
	3+000 3+500	500		None		60	60				100%		1.00	1.5	90	Resid.	300	210	10,500.0
	3+500 4+000	500				150	120	100%					0.50	2.0	240	Resid.	300	60	1,500.0
	4+000 4+500	500				150	120	100%					0.25	2.0	240	Comm.	450	210	2,625.0
	4+500 5+000	500			Railway Line	150	120	100%					0.25	2.0	240	Comm.	450	210	2,625.0
	5+000 5+500	500			Railway Line	150	120	100%					0.25	2.0	240	Comm.	450	210	2,625.0
	5+500 6+000	500			Railway Line	150	120	100%					0.25	2.0	240	Comm.	450	210	2,625.0
	6+000 6+500	500			Railway Line	150	120	100%					0.25	2.0	240	Comm.	450	210	2,625.0
	6+500 7+000	500			Railway Line	200	170		100%				0.25	2.0	340	Comm.	450	110	1,375.0
	7+000 7+500	500				200	170	50%	50%				0.25	2.0	340	Comm.	450	110	1,375.0
	7+500 8+000	500				200	170	100%					0.25	2.0	340	Comm.	450	110	1,375.0
	8+000 8+500	500				200	170	100%					0.25	2.0	340	Comm.	450	110	1,375.0
	8+500 9+000	500				200	170	100%					0.25	2.0	340	Comm.	450	110	1,375.0
	9+000 9+200	200				200	170	100%					0.25	2.0	340	Comm.	450	110	550.0
	(Total)	8,700																	87,300.0 · 10,034.5 (Rp.Mil./Km)
2	9+200 9+500	300				200	170	100%					0.25	2.0	340	Comm.	450	110	825.0
	9+500 10+000	500				200	170		50%		50%		0.50	2.0	340	Comm.	450	110	2,750.0
	10+000 10+500	500				200	170	100%					0.50	2.5	425	Comm.	450	25	625.0
	10+500 11+000	500		None	Jl. M.B. Extension	200	170	100%					1.00	2.5	425	Comm.	1,000	575	28,750.0
	11+000 11+500	500		None	Jl. M.B. Extension	200	170	100%					1.00	2.5	425	Comm.	1,000	575	28,750.0
	11+500 11+700	200		None	Jl. M.B. Extension	200	170	100%					1.00	2.5	425	Comm.	1,000	575	11,500.0
	(Total)	2,500																	73,200.0 · 29,280.0 (Rp.Mil./Km)

(Note) 1) Unit Compensation Cost : Based on the study results of land compensation cost in the cost estimates of Project. Figures in ( ) mean the assumed values which are not given in the cost estimates.

2) Estimated Existing Landuse : Classification is 1) Residential, 2) Commercial, 3) Industrial and 4) Agricultural/Space/Others. Percentages are roughly given based on the route aerophoto and field observation.

3) Estimated Existing Level of Development : Indications are roughly given based on the route aerophoto and field observation. "Comm. High" means "Highly developed commercial area" and "Residnl. High" means "Highly developed residential area".

4) Assumed Development Expected Factor : Assumed as 0.00 - 0.25 - 0.50 - 1.00, according to the site conditions such as the structural condition of planned road (elevated or not), existing landuse and the existing level of development.

5) Assumed Land Cost Adjustment Factor : Assumed as 1.5 - 2.0 - 2.5, according to the existing landuse. In case of "assumed development expected factor" to be zero, value of zero is given to "land cost adjustment factor".

Sec.	Subsection (Station)	Length (m) (a)	Elevated	Existing Road	Remark	Unit Compensation Cost (Rp.1,000/m2) (1) Incid. Bid. (b)	(2) Only Land (c)	Estm. Existing Landuse (%) (1) Residt.	(2) Comm.	(3) Indst.	(4) Agri/Space/Others	Assumed Future Development — Estimated Existing Level of Development	Assumed Development Expected Factor (d)	Estm. Unit Land Value (Existing) Assum. Land Cost Adjust. Factor (e)	Unit Value (Rp.1,000/m2) (f) =(c)x(e)	Assum. Unit Land Value (Future Development) Assum. Future Land Use	Assum. Unit Value (Rp.1,000/m2) (g)	Estimated Difference Unit Land Value (Rp.1,000/m2) (h) =(g)-(f)	Estimated Development Benefit (Rp.Million) (i) =(h)x(d)x(a) x100(m)
3	11+700 12+000	300		None	Jl.M.B. Extension	200	170	100%					1.00	2.5	425	Comm.	1,000	575	17,250.0
	12+000 12+500	500	Elv.		Jl.M.Besar	(200)	(170)		100%			Comm. High	0.00						0.0
	12+500 13+000	500	Elv.		Jl.M.Besar	(200)	(170)		100%			Comm. High	0.00						0.0
	13+000 13+500	500	Elv.		Jl.M.Besar	(200)	(170)		100%			Comm. High	0.00						0.0
	13+500 14+000	500	Elv.		Jl.M.Besar	200	170		100%			Comm. High	0.00						0.0
	14+000 14+500	500	Elv.			200	170		100%			Comm. High	0.00						0.0
	14+500 15+000	500	Elv.			200	170		100%			Comm. High	0.00						0.0
	15+000 15+500	500	Elv.		Ex.Kemayoran	200	170		100%			Comm. High	0.00						0.0
	15+500 16+000	500	Elv.		Ex.Kemayoran	200	170		100%			Comm. High	0.00						0.0
	16+000 16+500	500			Ex.Kemayoran	(200)	(170)		100%			Comm. High	0.00						0.0
	16+500 17+000	500	Elv.		Ex.Kemayoran	(200)	(170)		100%			Comm. High	0.00						0.0
	17+000 17+500	500	Elv.	None		200	170	100%				Comm. High	0.00						0.0
	17+500 18+000	500	Elv.	None	Sunter	200	170	100%				Resid. High	0.00						0.0
	18+000 18+500	500	Elv.	None	Sunter	200	170	100%				Resid. High	0.00						0.0
	18+500 19+000	500	Elv.		Sunter	(200)	(170)	50%			50%	Resid. High	0.00						0.0
	19+000 19+500	500	Elv.		Sunter	(200)	(170)	50%			50%	Resid. High	0.00						0.0
	19+500 20+000	500	Elv.		Sunter	(200)	(170)				100%	Resid. High	0.00						0.0
	20+000 20+150	150	Elv.			170	170												
	(Total)	8,450																	17,250.0

2,041.4 (Rp.Mil./Km)

(Note) 1) Unit Compensation Cost : Based on the study results of land compensation cost in the cost estimates of Project. Figures in ( ) mean the assumed values which are not given in the cost estimate.

2) Estimated Existing Landuse : Classification is 1) Residential, 2) Commercial, 3) Industrial and 4) Agricultural/Space/Others. Percentages are roughly given based on the route aerophoto and field observation.

3) Estimated Existing Level of Development : Indications are roughly given based on the route aerophoto and field observation. "Comm. High" means "Highly developed commercial area" and "Residt. High" means " Highly developed residential area".

4) Assumed Development Expected Factor : Assumed as 0.00 - 0.25 - 0.50 - 1.00, according to the site conditions such as the structural condition of planned road (elevated or not), existing landuse and the existing level of development.

5) Assumed Land Cost Adjustment Factor : Assumed as 1.5 - 2.0 - 2.5, according to the existing landuse. In case of "assumed development expected factor" to be zero, value of zero is given to "land cost adjustment factor".

Sec.	Subsection (Station)	Length (m) (a)	Elevated	Existing Road	Remark	Unit Comp. Cost (1) Incld. Bld. (b)	Unit Comp. Cost (2) Only Land (c)	Landuse (1) Residt.	Landuse (2) Comm.	Landuse (3) Indst.	Landuse (4) Agri./Space/Others	Est. Existing Level of Development	Assumed Devel. Expected Factor (d)	Assum. Land Cost Adjust. Factor (e)	Unit Value (Rp.1,000/m2) (f) (c)x(e)	Assum. Future Land Use	Assum. Unit Value (Rp.1,000/m2) (g)	Est. Diff. Unit Land Value (Rp.1,000/m2) (h) (g)-(f)	Est. Development Benefit (Rp. Million) (i) (h)x(d)x(a) x 100 (m)
4	20+150 20+500	350	Elv.			170	170	100%					1.00	2.5	425	Comm.	450	25	875.0
	20+500 21+000	500	Elv.			(130)	(130)				100%		1.00	2.5	325	Comm.	450	125	6,250.0
	21+000 21+500	500	Elv.			(165)	(130)		50%		50%		0.50	2.5	325	Comm.	450	125	3,125.0
	21+500 22+000	500	Elv.	Kelapa Gading		(165)	(130)		100%			Residt. High	0.00						0.0
	22+000 22+500	500	Elv.	Kelapa Gading		(165)	(130)		100%			Residt. High	0.00						0.0
	22+500 23+000	500	Elv.	Kelapa Gading		(165)	(130)		100%			Residt. High	0.00						0.0
	23+000 23+500	500	Elv.	Kelapa Gading		(165)	(130)		100%			Residt. High	0.00						0.0
	23+500 24+000	500	Elv.	Kelapa Gading		(165)	(130)		100%			Residt. High	0.00						0.0
	24+000 24+500	500	Elv.			165	130			100%			0.25	2.5	325	Comm.	450	125	1,562.5
	24+500 25+000	500				165	130			100%			0.25	2.5	325	Comm.	450	125	1,562.5
	25+000 25+500	500				165	130			100%			0.25	2.5	325	Comm.	450	125	1,562.5
	25+500 26+000	500				165	130			100%			0.50	2.5	325	Comm.	450	125	3,125.0
	26+000 26+500	500		None		165	130			100%			0.00	2.5	325				0.0
	26+500 27+000	500		None		165	130			100%			0.00	2.5	325				0.0
	27+000 27+500	500		None		130	130				100%		1.00	1.5	195	Residt.	300	105	5,250.0
	27+500 28+000	500		None		165	130	100%					0.25	2.0	260	Residt.	300	40	500.0
	28+000 28+500	500		None		165	130	100%					0.25	2.0	260	Residt.	300	40	500.0
	28+500 29+000	500		None		165	130			50%	50%		0.50	2.0	260	Residt.	300	40	1,000.0
	29+000 29+500	500		None		165	130			50%	50%		0.50	2.0	260	Residt.	300	40	1,000.0
	29+500 30+000	500		None		165	130	100%					0.50	2.0	260	Residt.	300	40	1,000.0
	30+000 30+500	500		None		165	130	100%					0.50	2.0	260	Residt.	300	40	1,000.0
	30+500 31+000	500		None		130	130				100%		1.00	1.5	195	Comm.	450	255	12,750.0
	31+000 31+250	250		None		130	130				100%		1.00	1.5	195	Comm.	450	255	6,375.0
	(Total)	11,100																	47,437.5
	(Grand Total)	30,750																	225,187.5

4,273.6 (Rp.Mil./Km)

7,323.2 (Rp.Mil./Km)

(Note) 1) Unit Compensation Cost : Based on the study results of land compensation cost in the cost estimates of Project. Figures in ( ) mean the assumed values which are not given in the cost estimates.

2) Estimated Existing Landuse : Classification is 1) Residential, 2) Commercial, 3) Industrial and 4) Agricultural/Space/Others. Percentages are roughly given based on the route aerophoto and field observation.

3) Estimated Existing Level of Development: Indications are roughly given based on the route aerophoto and field observation. "Comm. High" means "Highly developed commercial area" and "Residnt. High" means " Highly developed residential area".

4) Assumed Development Expected Factor : Assumed as 0.00 - 0.25 - 0.50 - 1.00, according to the site conditions such as the structural condition of planned road (elevated or not), existing landuse and the existing level of development.

5) Assumed Land Cost Adjustment Factor : Assumed as 1.5 - 2.0 - 2.5, according to the existing landuse. In case of "assumed development expected factor" to be zero, value of zero is given to "land cost adjustment factor".

16A-3 CALCULATION OF BENEFIT-COST RATIO,
NET PRESENT VALUE AND ECONOMIC
INTERNAL RATE OF RETURN FOR CASES
OF NORTH-SOUTH AXIS ONLY, EAST-WEST
AXIS AND BOTH NORTH-SOUTH AXIS AND
EASST-WEST AXIS CONSTRUCTED

North-South Axis
Economic Rate of Return and
Net Present Value Analysis
(Constant 1994 Billion Rupiah)

Fiscal Year	Investment Cost	O&M Cost	Economic Benefits			Net Economic Benefit
			VOC Savings	Time Cost Savings	Total Benefits	
1994	0.000	0.000	0.0	0.0	0.0	0.000
1995	9.891	0.000	0.0	0.0	0.0	-9.891
1996	46.944	0.000	0.0	0.0	0.0	-46.944
1997	169.095	0.000	0.0	0.0	0.0	-169.095
1998	225.818	0.000	0.0	0.0	0.0	-225.818
1999	225.818	0.000	0.0	0.0	0.0	-225.818
2000	150.419	1.768	114.4	268.9	383.3	231.113
2001		3.537	120.4	262.4	382.9	379.319
2002		3.537	126.8	256.1	382.9	379.350
2003		3.537	133.5	249.9	383.4	379.869
2004		3.537	140.5	243.9	384.4	380.889
2005		3.537	147.9	238.0	386.0	382.426
2006		3.537	155.7	232.3	388.0	384.495
2007		3.537	164.0	226.7	390.7	387.115
2008		3.537	172.6	221.2	393.8	390.302
2009		3.537	181.7	215.9	397.6	394.078
2010		3.537	191.3	210.7	402.0	398.463
2011		3.537	196.3	200.5	396.9	393.356
2012		3.896	201.5	190.9	392.4	388.512
2013		3.537	206.8	181.7	388.5	384.988
2014		3.537	212.3	172.9	385.2	381.689
2015		3.537	217.9	164.6	382.5	378.956
2016		3.537	223.6	156.7	380.3	376.772
2017		3.537	229.5	149.1	378.7	375.122
2018		3.537	235.6	141.9	377.5	373.991
2019		3.537	241.8	135.1	376.9	373.367
2020		3.537	248.2	128.6	376.8	373.236
2021		3.537	254.7	122.4	377.1	373.587
2022		3.537	261.5	116.5	377.9	374.409
2023		3.537	268.4	110.9	379.2	375.693
2024		3.537	275.4	105.5	381.0	377.429

Economic Rate of Return = 34.79%

Net Present Value (NPV) = 668.376 Billion Rupiah
(At 15 % Discount Rate)

Benefit Cost Ratio (B/C) = 2.63
(At 15 % Discount Rate)

			Economic Benefits			

East–West Axis
Economic Rate of Return and
Net Present Value Analysis
(Constant 1994 Billion Rupiah)

Fiscal Year	Investment Cost	O&M Cost	VOC Savings	Time Cost Savings	Total Benefits	Net Economic Benefit
1994	0.000	0.000	0.0	0.0	0.0	0.000
1995	0.000	0.000	0.0	0.0	0.0	0.000
1996	5.042	0.000	0.0	0.0	0.0	-5.042
1997	48.506	0.000	0.0	0.0	0.0	-48.506
1998	45.967	0.000	0.0	0.0	0.0	-45.967
1999	196.996	0.000	0.0	0.0	0.0	-196.996
2000	195.675	0.000	0.0	0.0	0.0	-195.675
2001	145.968	0.707	0.0	0.0	0.0	-146.675
2002	103.307	0.936	0.0	0.0	0.0	-104.243
2003	35.636	1.545	0.0	0.0	0.0	-37.181
2004	23.762	1.545	0.0	0.0	0.0	-25.307
2005		1.683	203.2	622.8	826.0	824.297
2006		1.683	221.2	617.6	838.7	837.041
2007		1.683	240.7	612.4	853.1	851.419
2008		1.683	262.0	607.2	869.3	867.570
2009		1.683	285.2	602.2	887.3	885.647
2010		1.683	310.4	597.1	907.5	905.817
2011		1.683	324.1	587.1	911.2	909.522
2012		1.683	338.5	577.2	915.7	914.003
2013		5.214	353.4	567.5	921.0	915.752
2014		1.818	369.1	558.0	927.1	925.252
2015		4.624	385.4	548.6	934.0	929.402
2016		1.683	402.4	539.4	941.9	940.177
2017		2.011	420.2	530.4	950.6	948.592
2018		1.683	438.8	521.5	960.3	958.601
2019		1.683	458.2	512.7	970.9	969.254
2020		1.683	478.5	504.1	982.6	980.912
2021		1.683	499.6	495.7	995.3	993.610
2022		1.683	521.7	487.3	1009.1	1,007.387
2023		1.683	544.8	479.2	1024.0	1,022.280
2024		1.683	568.9	471.1	1040.0	1,038.330
2025		1.683	594.0	463.2	1057.3	1,055.581

Economic Rate of Return = 32.50%

Net Present Value (NPV) = 903.4 Billion Rupiah
(At 15 % Discount Rate)

Benefit Cost Ratio (B/C) = 3.94
(At 15 % Discount Rate)

			Economic Benefits			
Fiscal Year	Investment Cost	O&M Cost	VOC Savings	Time Cost Savings	Total Benefits	Net Economic Benefit
1994	0.000	0.000	0.0	0.0	0.0	0.000
1995	9.891	0.000	0.0	0.0	0.0	−9.891
1996	51.986	0.000	0.0	0.0	0.0	−51.986
1997	217.601	0.000	0.0	0.0	0.0	−217.601
1998	271.785	0.000	0.0	0.0	0.0	−271.785
1999	422.814	0.000	0.0	0.0	0.0	−422.814
2000	346.094	1.768	114.4	268.9	383.3	35.438
2001	145.968	4.244	120.4	262.4	382.8	232.588
2002	103.307	4.473	126.8	256.1	382.9	275.120
2003	35.636	5.082	133.5	249.9	383.4	342.682
2004	23.762	5.082	140.5	243.9	384.4	355.556
2005		5.220	257.9	738.5	996.4	991.160
2006		5.220	273.4	720.5	993.9	988.633
2007		5.220	289.8	702.9	992.7	987.474
2008		5.220	307.2	685.7	992.9	987.729
2009		5.220	325.7	669.0	994.7	989.447
2010		5.220	345.2	652.7	997.9	992.680
2011		5.220	355.6	620.9	976.4	971.204
2012		5.579	366.2	590.6	956.8	951.233
2013		8.751	377.2	561.8	939.0	930.247
2014		5.355	388.5	534.4	922.9	917.564
2015		8.161	400.2	508.3	908.5	900.355
2016		5.220	412.2	483.5	895.7	890.515
2017		5.548	424.6	459.9	884.5	878.976
2018		5.220	437.3	437.5	874.8	869.614
2019		5.220	450.5	416.2	866.6	861.401
2020		5.220	464.0	395.9	859.8	854.624
2021		5.220	477.9	376.5	854.5	849.242
2022		5.220	492.3	358.2	850.4	845.220
2023		5.220	507.0	340.7	847.7	842.525
2024		5.220	522.3	324.1	846.3	841.125

Economic Rate of Return   =   31.11%

Net Present Value (NPV)   =   1,132.8 Billion Rupiah
(At 15 % Discount Rate)

Benefit Cost Ratio (B/C)   =   2.58
(At 15 % Discount Rate)

16A-4 **CASH-FLOW CALCULATION SHEETS FOR SENSITIVITY ANALYSIS CASE**

EQUITY RATIO : 20% AND 30% INITIAL INVESTMENT COSTS

INVESTMENT COST CASES : **2 CASES**

MANAGEMENT EXPENSE : **10% OF REVENUE CASE, OR 10% OF EQUITY CASE**

NOTE : CASE NUMBER IS BASED ON PAGE 16-29 OF MAIN TEXT

Case 1
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (20%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	3	12	1	0	13	13	1
1996	76	15	61	7	1	69	82	8
1997	286	57	229	25	9	263	345	34
1998	407	81	325	36	38	399	744	74
1999	435	87	348	38	82	468	1,212	120
2000	310	62	248	27	133	409	1,621	161
Totals	1,528	306				1,621		398

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 1
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000		4	0	-4	61	0	-65	0	0	-65	0	-65	-65
2001	124	8	6	110	61	32	17	178	1	-162	0	-162	-226
2002	141	8	7	125	61	32	32	178	13	-159	0	-159	-386
2003	159	9	8	142	61	32	49	178	26	-155	0	-155	-541
2004	178	10	9	160	61	32	67	175	41	-150	0	-150	-690
2005	200	10	10	180	61	32	87	170	61	-143	0	-143	-833
2006	224	11	11	202	61	32	109	161	84	-136	0	-136	-969
2007	251	12	13	226	61	32	133	149	111	-127	0	-127	-1,096
2008	280	12	14	253	61	32	160	137	137	-114	0	-114	-1,209
2009	311	13	16	282	61	32	189	125	160	-95	0	-95	-1,305
2010	346	14	17	315	61	32	222	113	180	-71	0	-71	-1,376
2011	385	15	19	350	61	32	257	101	195	-39	0	-39	-1,415
2012	427	18	21	387	61	32	294	89	205	-0	0	-0	-1,416
2013	472	18	24	431	61	32	338	78	208	53	0	53	-1,363
2014	523	19	26	478	61	32	385	66	201	118	0	118	-1,245
2015	578	20	29	529	61	32	436	54	183	199	70	130	-1,115
2016	638	21	32	584	61	32	491	42	162	288	101	187	-928
2017	703	23	35	645	61	32	552	30	131	391	137	254	-674
2018	775	25	39	712	61	32	619	19	87	513	180	334	-340
2019	854	26	43	785	61	32	692	9	25	657	230	427	87
2020	939	28	47	864	61	32	771	3	0	768	269	499	586
2021	1,032	30	52	951	61	32	858	0	0	858	300	558	1,143
2022	1,134	32	57	1,045	61	32	952	0	0	952	333	619	1,762
2023	1,245	34	62	1,148	61	32	1,055	0	0	1,055	369	686	2,448
2024	1,366	37	68	1,261	61	32	1,168	0	0	1,168	409	759	3,207
Totals		534		1,529	1,529	764					2,397		

Note: Management expense is 5% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Case 1
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Sources Of Funds						Uses Of Funds						Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses				
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	3	13	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	15	69	84	76	8	84	0	0	84	-0	0	0	0
1997	0	0	0	57	263	320	286	34	320	0	0	320	0	0	0	0
1998	0	0	0	81	399	480	407	74	480	0	0	480	0	0	0	0
1999	0	0	0	87	468	555	435	120	555	0	0	555	0	0	0	0
2000	-65	61	0	62	409	467	310	161	471	0	0	471	-4	4	0	0
2001	-162	61	32	0	0	-69	0	0	0	1	4	4	-73	73	0	0
2002	-159	61	32	0	0	-66	0	0	0	5	73	79	-145	145	0	0
2003	-155	61	32	0	0	-62	0	0	0	23	145	168	-230	230	0	0
2004	-150	61	32	0	0	-57	0	0	0	50	230	280	-336	336	0	0
2005	-143	61	32	0	0	-50	0	0	0	81	336	417	-467	467	0	0
2006	-136	61	32	0	0	-43	0	0	0	108	467	575	-618	618	0	0
2007	-127	61	32	0	0	-34	0	0	0	108	618	726	-760	760	0	0
2008	-114	61	32	0	0	-21	0	0	0	108	760	868	-888	888	0	0
2009	-95	61	32	0	0	-2	0	0	0	108	888	996	-999	999	0	0
2010	-71	61	32	0	0	22	0	0	0	108	999	1,107	-1,085	1,085	0	0
2011	-39	61	32	0	0	53	0	0	0	108	1,085	1,193	-1,140	1,140	0	0
2012	-0	61	32	0	0	93	0	0	0	108	1,140	1,248	-1,155	1,155	0	0
2013	53	61	32	0	0	146	0	0	0	108	1,155	1,263	-1,117	1,117	0	0
2014	118	61	32	0	0	211	0	0	0	108	1,117	1,225	-1,014	1,014	0	0
2015	130	61	32	0	0	223	0	0	0	108	1,014	1,122	-900	900	0	0
2016	187	61	32	0	0	280	0	0	0	107	900	1,007	-727	727	0	0
2017	254	61	32	0	0	347	0	0	0	103	727	830	-482	482	0	0
2018	334	61	32	0	0	427	0	0	0	85	482	567	-141	141	0	0
2019	427	61	32	0	0	520	0	0	0	58	141	199	321	0	321	321
2020	499	61	32	0	0	592	0	0	0	27	0	27	565	0	565	886
2021	558	61	32	0	0	650	0	0	0	0	0	0	650	0	650	1,536
2022	619	61	32	0	0	712	0	0	0	0	0	0	712	0	712	2,248
2023	686	61	32	0	0	779	0	0	0	0	0	0	779	0	779	3,027
2024	759	61	32	0	0	852	0	0	0	0	0	0	852	0	852	3,879
Totals	1,529	1,529	764		1,621		1,528	398	1,927	1,621						

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Case 2
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	76	23	53	6	1	60	72	7
1997	286	86	200	22	8	230	302	30
1998	407	122	285	31	33	349	651	65
1999	435	130	304	33	72	409	1,061	105
2000	310	93	217	24	117	358	1,418	141
Totals	1,528	459				1,418		348

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 2
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	61	0	-65	0	0	-65	0	-65	-65
2001	124	8	6	110	61	28	21	156	1	-135	0	-135	-200
2002	141	8	7	125	61	28	36	156	9	-129	0	-129	-329
2003	159	9	8	142	61	28	53	155	17	-120	0	-120	-449
2004	178	10	9	160	61	28	71	153	26	-109	0	-109	-558
2005	200	10	10	180	61	28	91	148	38	-95	0	-95	-653
2006	224	11	11	202	61	28	113	141	52	-79	0	-79	-732
2007	251	12	13	226	61	28	137	130	67	-60	0	-60	-792
2008	280	12	14	253	61	28	164	120	79	-34	0	-34	-826
2009	311	13	16	282	61	28	193	109	86	-2	0	-2	-828
2010	346	14	17	315	61	28	226	99	87	40	0	40	-788
2011	385	15	19	350	61	28	261	89	81	92	0	92	-697
2012	427	18	21	387	61	28	298	78	65	154	54	100	-596
2013	472	18	24	431	61	28	342	68	48	226	79	147	-449
2014	523	19	26	478	61	28	389	57	23	308	108	200	-249
2015	578	20	29	529	61	28	440	47	0	393	137	255	6
2016	638	21	32	584	61	28	495	37	0	459	161	298	304
2017	703	23	35	645	61	28	556	26	0	530	185	344	649
2018	775	25	39	712	61	28	623	16	0	606	212	394	1,043
2019	854	26	43	785	61	28	696	8	0	687	241	447	1,490
2020	939	28	47	864	61	28	775	3	0	772	270	502	1,992
2021	1,032	30	52	951	61	28	862	0	0	862	302	560	2,552
2022	1,134	32	57	1,045	61	28	956	0	0	956	335	622	3,173
2023	1,245	34	62	1,148	61	28	1,059	0	0	1,059	371	689	3,862
2024	1,366	37	68	1,261	61	28	1,172	0	0	1,172	410	762	4,624
Totals		534			1,529	669					2,865		

Note: Management expense is 5% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Case 2
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Sources Of Funds						Uses Of Funds						Sources			
	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	23	60	83	76	7	83	0	0	83	0	0	0	0
1997	0	0	0	86	230	316	286	30	316	0	0	316	0	0	0	0
1998	0	0	0	122	349	471	407	65	471	0	0	471	0	0	0	0
1999	0	0	0	130	409	540	435	105	540	0	0	540	0	0	0	0
2000	-65	61	0	93	358	447	310	141	451	0	0	451	-4	4	0	0
2001	-135	61	28	0	0	-46	0	0	0	1	4	5	-51	51	0	0
2002	-129	61	28	0	0	-40	0	0	0	5	51	56	-96	96	0	0
2003	-120	61	28	0	0	-31	0	0	0	20	96	116	-147	147	0	0
2004	-109	61	28	0	0	-20	0	0	0	43	147	190	-210	210	0	0
2005	-95	61	28	0	0	-6	0	0	0	71	210	280	-287	287	0	0
2006	-79	61	28	0	0	10	0	0	0	95	287	381	-371	371	0	0
2007	-60	61	28	0	0	29	0	0	0	95	371	466	-437	437	0	0
2008	-34	61	28	0	0	55	0	0	0	95	437	531	-476	476	0	0
2009	-2	61	28	0	0	87	0	0	0	95	476	571	-484	484	0	0
2010	40	61	28	0	0	129	0	0	0	95	484	578	-450	450	0	0
2011	92	61	28	0	0	181	0	0	0	95	450	544	-364	364	0	0
2012	100	61	28	0	0	189	0	0	0	95	364	458	-269	269	0	0
2013	147	61	28	0	0	236	0	0	0	95	269	363	-127	127	0	0
2014	200	61	28	0	0	289	0	0	0	95	127	222	68	0	68	68
2015	255	61	28	0	0	344	0	0	0	95	0	95	250	0	250	317
2016	298	61	28	0	0	387	0	0	0	94	0	94	293	0	293	611
2017	344	61	28	0	0	433	0	0	0	90	0	90	344	0	344	954
2018	394	61	28	0	0	483	0	0	0	74	0	74	409	0	409	1,363
2019	447	61	28	0	0	536	0	0	0	51	0	51	485	0	485	1,848
2020	502	61	28	0	0	591	0	0	0	24	0	24	567	0	567	2,415
2021	560	61	28	0	0	649	0	0	0	0	0	0	649	0	649	3,064
2022	622	61	28	0	0	711	0	0	0	0	0	0	711	0	711	3,774
2023	689	61	28	0	0	778	0	0	0	0	0	0	778	0	778	4,552
2024	762	61	28	0	0	851	0	0	0	0	0	0	851	0	851	5,403
Totals	1,529	1,529	669		1,418		1,528	348	1,877	1,418						

Case 3
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (20%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	3	12	1	0	13	13	1
1996	16	3	12	1	1	15	28	3
1997	234	47	187	21	3	211	239	24
1998	376	75	301	33	26	360	599	59
1999	402	80	321	35	66	423	1,022	101
2000	287	57	229	25	112	367	1,389	138
Totals	1,329	266				1,389		326

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 3
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	53	0	-57	0	0	-57	0	-57	-57
2001	124	8	6	110	53	26	31	153	1	-122	0	-122	-179
2002	141	8	7	125	53	26	46	153	9	-115	0	-115	-295
2003	159	9	8	142	53	26	62	152	15	-106	0	-106	-400
2004	178	10	9	160	53	26	81	151	23	-93	0	-93	-493
2005	200	10	10	180	53	26	101	146	33	-78	0	-78	-572
2006	224	11	11	202	53	26	123	139	45	-61	0	-61	-632
2007	251	12	13	226	53	26	147	129	58	-40	0	-40	-672
2008	280	12	14	253	53	26	174	118	68	-12	0	-12	-685
2009	311	13	16	282	53	26	203	108	72	23	0	23	-662
2010	346	14	17	315	53	26	235	98	71	67	0	67	-595
2011	385	15	19	350	53	26	271	88	61	122	34	87	-508
2012	427	18	21	387	53	26	308	78	48	182	64	119	-389
2013	472	18	24	431	53	26	352	68	29	256	89	166	-223
2014	523	19	26	478	53	26	398	57	1	340	119	221	-2
2015	578	20	29	529	53	26	449	47	0	402	141	261	259
2016	638	21	32	584	53	26	505	37	0	468	164	304	563
2017	703	23	35	645	53	26	566	27	0	539	189	350	914
2018	775	25	39	712	53	26	633	17	0	616	215	400	1,314
2019	854	26	43	785	53	26	705	8	0	697	244	453	1,767
2020	939	28	47	864	53	26	785	3	0	782	274	508	2,275
2021	1,032	30	52	951	53	26	871	0	0	871	305	566	2,842
2022	1,134	32	57	1,045	53	26	966	0	0	966	338	628	3,470
2023	1,245	34	62	1,148	53	26	1,069	0	0	1,069	374	695	4,165
2024	1,366	37	68	1,261	53	26	1,182	0	0	1,182	414	768	4,933
Totals			534		1,329	626					2,964		

Note: Management expense is 5% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Case 3
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
				Sources Of Funds					Uses Of Funds				Sources			
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	3	13	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	3	15	18	16	3	18	0	0	18	0	0	0	0
1997	0	0	0	47	211	258	234	24	258	0	0	258	0	0	0	0
1998	0	0	0	75	360	435	376	59	435	0	0	435	0	0	0	0
1999	0	0	0	80	423	503	402	101	503	0	0	503	0	0	0	0
2000	-57	53	0	57	367	421	287	138	424	0	0	424	-4	4	0	0
2001	-122	53	26	0	0	-43	0	0	0	1	4	4	-48	48	0	0
2002	-115	53	26	0	0	-36	0	0	0	2	48	50	-86	86	0	0
2003	-106	53	26	0	0	-26	0	0	0	16	86	102	-128	128	0	0
2004	-93	53	26	0	0	-14	0	0	0	40	128	168	-182	182	0	0
2005	-78	53	26	0	0	1	0	0	0	68	182	250	-249	249	0	0
2006	-61	53	26	0	0	18	0	0	0	93	249	342	-323	323	0	0
2007	-40	53	26	0	0	40	0	0	0	93	323	416	-376	376	0	0
2008	-12	53	26	0	0	67	0	0	0	93	376	469	-402	402	0	0
2009	23	53	26	0	0	102	0	0	0	93	402	495	-393	393	0	0
2010	67	53	26	0	0	146	0	0	0	93	393	485	-340	340	0	0
2011	87	53	26	0	0	167	0	0	0	93	340	432	-265	265	0	0
2012	119	53	26	0	0	198	0	0	0	93	265	358	-160	160	0	0
2013	166	53	26	0	0	245	0	0	0	93	160	253	-8	8	0	0
2014	221	53	26	0	0	300	0	0	0	93	8	100	200	0	200	200
2015	261	53	26	0	0	341	0	0	0	93	0	93	248	0	248	448
2016	304	53	26	0	0	384	0	0	0	92	0	92	292	0	292	740
2017	350	53	26	0	0	430	0	0	0	91	0	91	339	0	339	1,079
2018	400	53	26	0	0	479	0	0	0	77	0	77	403	0	403	1,482
2019	453	53	26	0	0	532	0	0	0	53	0	53	480	0	480	1,961
2020	508	53	26	0	0	588	0	0	0	24	0	24	563	0	563	2,524
2021	566	53	26	0	0	646	0	0	0	0	0	0	646	0	646	3,170
2022	628	53	26	0	0	707	0	0	0	0	0	0	707	0	707	3,877
2023	695	53	26	0	0	774	0	0	0	0	0	0	774	0	774	4,651
2024	768	53	26	0	0	847	0	0	0	0	0	0	847	0	847	5,499
Totals		1,329	626		1,389		1,329	326	1,655	1,389						

Case 4
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	16	5	11	1	1	13	25	2
1997	234	70	164	18	3	185	209	21
1998	376	113	263	29	23	315	525	52
1999	402	121	281	31	58	370	894	89
2000	287	86	201	22	98	321	1,215	120
Totals	1,329	399				1,215		285

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 4
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	53	0	-57	0	0	-57	0	-57	-57
2001	124	8	6	110	53	23	34	134	1	-100	0	-100	-157
2002	141	8	7	125	53	23	49	134	5	-90	0	-90	-246
2003	159	9	8	142	53	23	66	133	8	-76	0	-76	-322
2004	178	10	9	160	53	23	84	132	10	-58	0	-58	-380
2005	200	10	10	180	53	23	104	128	13	-37	0	-37	-418
2006	224	11	11	202	53	23	126	121	17	-13	0	-13	-431
2007	251	12	13	226	53	23	150	113	20	17	0	17	-413
2008	280	12	14	253	53	23	177	104	18	55	0	55	-358
2009	311	13	16	282	53	23	206	95	9	103	23	79	-279
2010	346	14	17	315	53	23	239	86	0	153	54	99	-179
2011	385	15	19	350	53	23	274	77	0	197	69	128	-51
2012	427	18	21	387	53	23	311	68	0	243	85	158	107
2013	472	18	24	431	53	23	355	59	0	296	104	193	299
2014	523	19	26	478	53	23	402	50	0	352	123	229	528
2015	578	20	29	529	53	23	453	41	0	411	144	267	795
2016	638	21	32	584	53	23	508	32	0	476	167	309	1,105
2017	703	23	35	645	53	23	569	24	0	546	191	355	1,459
2018	775	25	39	712	53	23	636	15	0	621	217	404	1,863
2019	854	26	43	785	53	23	709	7	0	701	245	456	2,319
2020	939	28	47	864	53	23	788	2	0	786	275	511	2,830
2021	1,032	30	52	951	53	23	875	0	0	875	306	569	3,398
2022	1,134	32	57	1,045	53	23	969	0	0	969	339	630	4,028
2023	1,245	34	62	1,148	53	23	1,072	0	0	1,072	375	697	4,725
2024	1,366	37	68	1,261	53	23	1,185	0	0	1,185	415	770	5,495
Totals		534			1,329	548					3,132		

Note: Management expense is 5% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	5	13	18	16	2	18	0	0	18	0	0	0	0
1997	0	0	0	70	185	255	234	21	255	0	0	255	0	0	0	0
1998	0	0	0	113	315	428	376	52	428	0	0	428	0	0	0	0
1999	0	0	0	121	370	490	402	89	490	0	0	490	0	0	0	0
2000	-57	53	0	86	321	403	287	120	407	0	0	407	-4	4	0	0
2001	-100	53	23	0	0	-24	0	0	0	1	4	4	-29	29	0	0
2002	-90	53	23	0	0	-14	0	0	0	2	29	30	-44	44	0	0
2003	-76	53	23	0	0	0	0	0	0	14	44	58	-57	57	0	0
2004	-58	53	23	0	0	18	0	0	0	35	57	92	-75	75	0	0
2005	-37	53	23	0	0	38	0	0	0	60	75	134	-96	96	0	0
2006	-13	53	23	0	0	63	0	0	0	81	96	177	-114	114	0	0
2007	17	53	23	0	0	93	0	0	0	81	114	195	-101	101	0	0
2008	55	53	23	0	0	131	0	0	0	81	101	182	-51	51	0	0
2009	79	53	23	0	0	155	0	0	0	81	51	132	23	0	23	23
2010	99	53	23	0	0	175	0	0	0	81	0	81	94	0	94	118
2011	128	53	23	0	0	204	0	0	0	81	0	81	123	0	123	241
2012	158	53	23	0	0	234	0	0	0	81	0	81	153	0	153	394
2013	193	53	23	0	0	268	0	0	0	81	0	81	187	0	187	581
2014	229	53	23	0	0	304	0	0	0	81	0	81	223	0	223	805
2015	267	53	23	0	0	343	0	0	0	81	0	81	262	0	262	1,067
2016	309	53	23	0	0	385	0	0	0	80	0	80	305	0	305	1,372
2017	355	53	23	0	0	431	0	0	0	79	0	79	351	0	351	1,723
2018	404	53	23	0	0	480	0	0	0	67	0	67	413	0	413	2,136
2019	456	53	23	0	0	532	0	0	0	46	0	46	486	0	486	2,622
2020	511	53	23	0	0	587	0	0	0	21	0	21	565	0	565	3,187
2021	569	53	23	0	0	645	0	0	0	0	0	0	645	0	645	3,831
2022	630	53	23	0	0	706	0	0	0	0	0	0	706	0	706	4,537
2023	697	53	23	0	0	773	0	0	0	0	0	0	773	0	773	5,310
2024	770	53	23	0	0	846	0	0	0	0	0	0	846	0	846	6,157
Totals	1,329	1,329	548		1,215		1,329	285	1,614	1,215						

Case 5
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	76	23	53	6	1	60	72	7
1997	286	86	200	22	8	230	302	30
1998	407	122	285	31	33	349	651	65
1999	435	130	304	33	72	409	1,061	105
2000	310	93	217	24	117	358	1,418	141
Totals	1,528	459				1,418		348

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

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Case 5
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	61	0	-65	0	0	-65	0	-65	-65
2001	124	8	12	104	61	28	15	156	1	-142	0	-142	-206
2002	141	8	14	118	61	28	29	156	10	-137	0	-137	-344
2003	159	9	16	134	61	28	45	155	20	-130	0	-130	-474
2004	178	10	18	151	61	28	62	153	31	-122	0	-122	-596
2005	200	10	20	170	61	28	81	148	45	-112	0	-112	-708
2006	224	11	22	191	61	28	102	141	62	-100	0	-100	-808
2007	251	12	25	214	61	28	125	130	81	-86	0	-86	-894
2008	280	12	28	239	61	28	150	120	97	-67	0	-67	-961
2009	311	13	31	267	61	28	178	109	110	-42	0	-42	-1,003
2010	346	14	35	297	61	28	208	99	119	-9	0	-9	-1,012
2011	385	15	38	331	61	28	242	89	121	32	0	32	-980
2012	427	18	43	366	61	28	277	78	116	82	0	82	-898
2013	472	18	47	408	61	28	319	68	103	146	51	97	-800
2014	523	19	52	452	61	28	363	57	86	219	77	142	-658
2015	578	20	58	500	61	28	411	47	61	302	106	197	-461
2016	638	21	64	552	61	28	463	37	27	400	140	260	-201
2017	703	23	70	610	61	28	521	26	0	495	173	322	120
2018	775	25	78	673	61	28	584	16	0	568	199	369	489
2019	854	26	85	742	61	28	653	8	0	645	226	419	908
2020	939	28	94	817	61	28	728	3	0	725	254	471	1,380
2021	1,032	30	103	899	61	28	810	0	0	810	284	527	1,906
2022	1,134	32	113	989	61	28	900	0	0	900	315	585	2,491
2023	1,245	34	125	1,086	61	28	997	0	0	997	349	648	3,139
2024	1,366	37	137	1,193	61	28	1,104	0	0	1,104	386	717	3,856
Totals			1,067		1,529	669					2,558		

Note: Management expense is 10% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Fiscal Year	Sources Of Funds						Uses Of Funds						Sources			
	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	23	60	83	76	7	83	0	0	83	0	0	0	0
1997	0	0	0	86	230	316	286	30	316	0	0	316	0	0	0	0
1998	0	0	0	122	349	471	407	65	471	0	0	471	0	0	0	0
1999	0	0	0	130	409	540	435	105	540	0	0	540	0	0	0	0
2000	-65	61	0	93	358	447	310	141	451	0	0	451	-4	4	0	0
2001	-142	61	28	0	0	-53	0	0	0	1	4	4	-57	57	0	0
2002	-137	61	28	0	0	-48	0	0	0	5	57	62	-110	110	0	0
2003	-130	61	28	0	0	-41	0	0	0	20	110	130	-171	171	0	0
2004	-122	61	28	0	0	-33	0	0	0	43	171	215	-248	248	0	0
2005	-112	61	28	0	0	-23	0	0	0	71	248	319	-342	342	0	0
2006	-100	61	28	0	0	-11	0	0	0	95	342	436	-448	448	0	0
2007	-86	61	28	0	0	3	0	0	0	95	448	542	-539	539	0	0
2008	-67	61	28	0	0	22	0	0	0	95	539	634	-611	611	0	0
2009	-42	61	28	0	0	47	0	0	0	95	611	706	-658	658	0	0
2010	-9	61	28	0	0	80	0	0	0	95	658	753	-673	673	0	0
2011	32	61	28	0	0	121	0	0	0	95	673	768	-647	647	0	0
2012	82	61	28	0	0	171	0	0	0	95	647	741	-570	570	0	0
2013	97	61	28	0	0	186	0	0	0	95	570	665	-478	478	0	0
2014	142	61	28	0	0	231	0	0	0	95	478	573	-341	341	0	0
2015	197	61	28	0	0	286	0	0	0	95	341	436	-150	150	0	0
2016	260	61	28	0	0	349	0	0	0	94	150	244	105	0	105	105
2017	322	61	28	0	0	411	0	0	0	90	0	90	321	0	321	426
2018	369	61	28	0	0	458	0	0	0	74	0	74	384	0	384	809
2019	419	61	28	0	0	508	0	0	0	51	0	51	457	0	457	1,266
2020	471	61	28	0	0	560	0	0	0	24	0	24	537	0	537	1,803
2021	527	61	28	0	0	616	0	0	0	0	0	0	616	0	616	2,418
2022	585	61	28	0	0	674	0	0	0	0	0	0	674	0	674	3,092
2023	648	61	28	0	0	737	0	0	0	0	0	0	737	0	737	3,829
2024	717	61	28	0	0	806	0	0	0	0	0	0	806	0	806	4,635
Totals		1,529	669		1,418		1,528	348	1,877	1,418						

Case 6
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	76	23	53	6	1	60	72	7
1997	286	86	200	22	8	230	302	30
1998	407	122	285	31	33	349	651	65
1999	435	130	304	33	72	409	1,061	105
2000	310	93	217	24	117	358	1,418	141
Totals	1,528	459				1,418		348

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 6
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	61	0	-65	0	0	-65	0	-65	-65
2001	124	8	46	71	61	28	-18	156	1	-175	0	-175	-240
2002	141	8	46	86	61	28	-3	156	16	-175	0	-175	-415
2003	159	9	46	104	61	28	15	155	33	-173	0	-173	-588
2004	178	10	46	123	61	28	34	153	51	-171	0	-171	-759
2005	200	10	46	144	61	28	55	148	74	-167	0	-167	-926
2006	224	11	46	167	61	28	78	141	101	-163	0	-163	-1,089
2007	251	12	46	193	61	28	104	130	131	-157	0	-157	-1,246
2008	280	12	46	221	61	28	132	120	160	-148	0	-148	-1,394
2009	311	13	46	252	61	28	163	109	188	-134	0	-134	-1,528
2010	346	14	46	286	61	28	197	99	213	-115	0	-115	-1,643
2011	385	15	46	323	61	28	234	89	235	-89	0	-89	-1,732
2012	427	18	46	363	61	28	274	78	252	-56	0	-56	-1,789
2013	472	18	46	409	61	28	320	68	263	-11	0	-11	-1,799
2014	523	19	46	458	61	28	369	57	266	46	0	46	-1,754
2015	578	20	46	512	61	28	423	47	259	117	0	117	-1,637
2016	638	21	46	570	61	28	481	37	239	206	72	134	-1,503
2017	703	23	46	635	61	28	546	26	215	304	106	198	-1,305
2018	775	25	46	705	61	28	616	16	180	419	147	273	-1,033
2019	854	26	46	781	61	28	692	8	128	556	195	361	-672
2020	939	28	46	865	61	28	776	3	56	717	251	466	-206
2021	1,032	30	46	956	61	28	867	0	0	867	304	564	358
2022	1,134	32	46	1,056	61	28	967	0	0	967	338	629	987
2023	1,245	34	46	1,165	61	28	1,076	0	0	1,076	377	699	1,686
2024	1,366	37	46	1,283	61	28	1,194	0	0	1,194	418	776	2,462
Totals			1,009		1,529	669					2,207		

Note: Yearly management expense is 10% of equity. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

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Case 6
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Net Profit After Tax	Asset Depre- ciation	Interest Depre- ciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
						Sources Of Funds				**Uses Of Funds**			**Sources**			
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	23	60	83	76	7	83	0	0	83	0	0	0	0
1997	0	0	0	86	230	316	286	30	316	0	0	316	0	0	0	0
1998	0	0	0	122	349	471	407	65	471	0	0	471	0	0	0	0
1999	0	0	0	130	409	540	435	105	540	0	0	540	0	0	0	0
2000	-65	61	28	93	358	447	310	141	451	0	0	451	-4	4	0	0
2001	-175	61	28	0	0	-86	0	0	0	1	4	4	-90	90	0	0
2002	-175	61	28	0	0	-86	0	0	0	5	90	95	-181	181	0	0
2003	-173	61	28	0	0	-84	0	0	0	20	181	201	-286	286	0	0
2004	-171	61	28	0	0	-82	0	0	0	43	286	329	-411	411	0	0
2005	-167	61	28	0	0	-78	0	0	0	71	411	481	-560	560	0	0
2006	-163	61	28	0	0	-74	0	0	0	95	560	654	-728	728	0	0
2007	-157	61	28	0	0	-68	0	0	0	95	728	823	-891	891	0	0
2008	-148	61	28	0	0	-59	0	0	0	95	891	985	-1,044	1,044	0	0
2009	-134	61	28	0	0	-45	0	0	0	95	1,044	1,139	-1,184	1,184	0	0
2010	-115	61	28	0	0	-26	0	0	0	95	1,184	1,278	-1,304	1,304	0	0
2011	-89	61	28	0	0	0	0	0	0	95	1,304	1,399	-1,399	1,399	0	0
2012	-56	61	28	0	0	33	0	0	0	95	1,399	1,494	-1,461	1,461	0	0
2013	-11	61	28	0	0	78	0	0	0	95	1,461	1,556	-1,477	1,477	0	0
2014	46	61	28	0	0	135	0	0	0	95	1,477	1,572	-1,437	1,437	0	0
2015	117	61	28	0	0	206	0	0	0	95	1,437	1,532	-1,326	1,326	0	0
2016	134	61	28	0	0	223	0	0	0	94	1,326	1,420	-1,197	1,197	0	0
2017	198	61	28	0	0	287	0	0	0	90	1,197	1,286	-1,000	1,000	0	0
2018	273	61	28	0	0	362	0	0	0	74	1,000	1,074	-713	713	0	0
2019	361	61	28	0	0	450	0	0	0	51	713	764	-314	314	0	0
2020	466	61	28	0	0	555	0	0	0	24	314	337	218	0	218	218
2021	564	61	28	0	0	653	0	0	0	0	0	0	653	0	653	870
2022	629	61	28	0	0	718	0	0	0	0	0	0	718	0	718	1,588
2023	699	61	28	0	0	788	0	0	0	0	0	0	788	0	788	2,376
2024	776	61	28	0	0	865	0	0	0	0	0	0	865	0	865	3,242
Totals	1,529		669		1,418		1,528	348	1,877	1,418						

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Case 7
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	16	5	11	1	1	13	25	2
1997	234	70	164	18	3	185	209	21
1998	376	113	263	29	23	315	525	52
1999	402	121	281	31	58	370	894	89
2000	287	86	201	22	98	321	1,215	120
Totals	1,329	399				1,215		285

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

Case 7
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	53	0	-57	0	0	-57	0	-57	-57
2001	124	8	12	104	53	23	28	134	1	-106	0	-106	-163
2002	141	8	14	118	53	23	42	134	6	-98	0	-98	-261
2003	159	9	16	134	53	23	58	133	10	-86	0	-86	-347
2004	178	10	18	151	53	23	75	132	15	-72	0	-72	-419
2005	200	10	20	170	53	23	94	128	20	-54	0	-54	-473
2006	224	11	22	191	53	23	115	121	27	-34	0	-34	-507
2007	251	12	25	214	53	23	138	113	34	-9	0	-9	-516
2008	280	12	28	239	53	23	163	104	37	23	0	23	-493
2009	311	13	31	267	53	23	191	95	33	63	0	63	-430
2010	346	14	35	297	53	23	221	86	23	112	35	77	-353
2011	385	15	38	331	53	23	255	77	10	168	59	109	-244
2012	427	18	43	366	53	23	290	68	0	222	78	144	-100
2013	472	18	47	408	53	23	332	59	0	273	95	177	77
2014	523	19	52	452	53	23	376	50	0	325	114	212	289
2015	578	20	58	500	53	23	424	41	0	383	134	249	538
2016	638	21	64	552	53	23	476	32	0	444	155	289	826
2017	703	23	70	610	53	23	534	24	0	511	179	332	1,158
2018	775	25	78	673	53	23	597	15	0	582	204	379	1,537
2019	854	26	85	742	53	23	666	7	0	658	230	428	1,965
2020	939	28	94	817	53	23	741	2	0	739	259	480	2,445
2021	1,032	30	103	899	53	23	823	0	0	823	288	535	2,980
2022	1,134	32	113	989	53	23	913	0	0	913	319	593	3,573
2023	1,245	34	125	1,086	53	23	1,010	0	0	1,010	354	657	4,229
2024	1,366	37	137	1,193	53	23	1,117	0	0	1,117	391	726	4,955
Totals			1,067		1,329	548					2,894		

Note: Management expense is 10% of revenue. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

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Case 7
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Net Profit After Tax	Asset Depreciation	Interest Depreciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses	Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	5	13	18	16	2	18	0	0	18	0	0	0	0
1997	0	0	0	70	185	255	234	21	255	0	0	255	0	0	0	0
1998	0	0	0	113	315	428	376	52	428	0	0	428	0	0	0	0
1999	0	0	0	121	370	490	402	89	490	0	0	490	0	0	0	0
2000	-57	0	0	86	321	403	287	120	407	0	0	407	-4	4	0	0
2001	-106	53	23	0	0	-30	0	0	0	1	4	4	-35	35	0	0
2002	-98	53	23	0	0	-22	0	0	0	2	35	36	-58	58	0	0
2003	-86	53	23	0	0	-10	0	0	0	14	58	72	-82	82	0	0
2004	-72	53	23	0	0	4	0	0	0	35	82	117	-113	113	0	0
2005	-54	53	23	0	0	22	0	0	0	60	113	173	-151	151	0	0
2006	-34	53	23	0	0	42	0	0	0	81	151	232	-190	190	0	0
2007	-9	53	23	0	0	67	0	0	0	81	190	271	-204	204	0	0
2008	23	53	23	0	0	99	0	0	0	81	204	285	-186	186	0	0
2009	63	53	23	0	0	139	0	0	0	81	186	267	-128	128	0	0
2010	77	53	23	0	0	153	0	0	0	81	128	209	-56	56	0	0
2011	109	53	23	0	0	185	0	0	0	81	56	137	48	0	48	48
2012	144	53	23	0	0	220	0	0	0	81	0	81	139	0	139	187
2013	177	53	23	0	0	253	0	0	0	81	0	81	172	0	172	359
2014	212	53	23	0	0	288	0	0	0	81	0	81	206	0	206	566
2015	249	53	23	0	0	325	0	0	0	81	0	81	244	0	244	809
2016	289	53	23	0	0	365	0	0	0	80	0	80	284	0	284	1,094
2017	332	53	23	0	0	408	0	0	0	79	0	79	328	0	328	1,422
2018	379	53	23	0	0	454	0	0	0	67	0	67	387	0	387	1,809
2019	428	53	23	0	0	504	0	0	0	46	0	46	458	0	458	2,267
2020	480	53	23	0	0	556	0	0	0	21	0	21	535	0	535	2,802
2021	535	53	23	0	0	611	0	0	0	0	0	0	611	0	611	3,413
2022	593	53	23	0	0	669	0	0	0	0	0	0	669	0	669	4,082
2023	657	53	23	0	0	733	0	0	0	0	0	0	733	0	733	4,815
2024	726	53	23	0	0	802	0	0	0	0	0	0	802	0	802	5,617
Totals	1,329	1,329	548	548	1,215		1,329	285	1,614	1,215						

Case 8
Worksheet for Financing Plan
(Current Billion Rupiah)

Fiscal Year	Investment Cost	Equity (30%)	Long Term Loan	Interest Expense On Loan	Interest on Outstanding Balance	Total Loan Taken During Year	Balance At End Of Year	Interest During Const'n
1994	0	0	0	0	0	0	0	0
1995	15	4	10	1	0	11	11	1
1996	16	5	11	1	1	13	25	2
1997	234	70	164	18	3	185	209	21
1998	376	113	263	29	23	315	525	52
1999	402	121	281	31	58	370	894	89
2000	287	86	201	22	98	321	1,215	120
Totals	1,329	399				1,215		285

Note: Interest rate is 11% per year. Grace on principle during construction. Repayment is for 15 years with equal principal payments. Interest is capitalized during construction.

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Case 8
Projected Income Statement
(Current Billion Rupiah)

Fiscal Year	Revenue	O & M Costs	Management Expense	Gross Profit	Asset Depreciation	Interest Depreciation	Operating Profit	Long-Term Loan Interest	Short-Term Loan Interest	Profit Before Taxes	Corporate Tax (35%)	Net Profit After Tax	Accum. Profit After Tax
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	4	0	-4	53	0	-57	0	0	-57	0	-57	-57
2001	124	8	40	77	53	23	1	134	1	-134	0	-134	-191
2002	141	8	40	92	53	23	16	134	11	-128	0	-128	-319
2003	159	9	40	110	53	23	34	133	21	-121	0	-121	-440
2004	178	10	40	129	53	23	53	132	31	-110	0	-110	-550
2005	200	10	40	150	53	23	74	128	44	-98	0	-98	-648
2006	224	11	40	173	53	23	97	121	59	-83	0	-83	-731
2007	251	12	40	199	53	23	123	113	74	-64	0	-64	-795
2008	280	12	40	227	53	23	151	104	87	-39	0	-39	-834
2009	311	13	40	258	53	23	182	95	95	-7	0	-7	-841
2010	346	14	40	292	53	23	216	86	97	33	0	33	-808
2011	385	15	40	329	53	23	253	77	92	85	0	85	-723
2012	427	18	40	369	53	23	293	68	78	147	51	95	-628
2013	472	18	40	415	53	23	339	59	61	219	76	142	-486
2014	523	19	40	464	53	23	388	50	37	301	105	196	-290
2015	578	20	40	518	53	23	442	41	2	398	139	259	-31
2016	638	21	40	576	53	23	500	32	0	468	164	304	273
2017	703	23	40	641	53	23	565	24	0	541	189	352	624
2018	775	25	40	711	53	23	635	15	0	620	217	403	1,027
2019	854	26	40	787	53	23	711	7	0	704	246	458	1,485
2020	939	28	40	871	53	23	795	2	0	793	277	515	2,000
2021	1,032	30	40	962	53	23	886	0	0	886	310	576	2,576
2022	1,134	32	40	1,062	53	23	986	0	0	986	345	641	3,217
2023	1,245	34	40	1,171	53	23	1,095	0	0	1,095	383	712	3,929
2024	1,366	37	40	1,289	53	23	1,213	0	0	1,213	425	789	4,718
Totals		877			1,329	548					2,930		

Note: Yearly management expense is 10% of equity. Asset depreciation is straight line for 25 years. Interest during construction is depreciated straight line for 25 years. Yearly short-term loan interest rate is 18%.

Case 8
Projected Sources & Uses of Funds
(Current Billion Rupiah)

Fiscal Year	Sources Of Funds						Uses Of Funds						Sources Minus Uses	Short Term Loan	Net Cash Flow	Accum. Net Cash Flow
	Net Profit After Tax	Asset Depre-ciation	Interest Depre-ciation	Equity	Long Term Loan	Total Sources	Investment Cost	Interest During Const'n	Total Project Cost	Long-Term Loan Repayment	Short-Term Loan Repayment	Total Uses				
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	4	11	16	15	1	16	0	0	16	0	0	0	0
1996	0	0	0	5	13	18	16	2	18	0	0	18	0	0	0	0
1997	0	0	0	70	185	255	234	21	255	0	0	255	0	0	0	0
1998	0	0	0	113	315	428	376	52	428	0	0	428	0	0	0	0
1999	0	0	0	121	370	490	402	89	490	0	0	490	0	0	0	0
2000	-57	53	23	86	321	403	287	120	407	0	0	407	-4	4	0	0
2001	-134	53	23	0	0	-58	0	0	0	1	4	4	-62	62	0	0
2002	-128	53	23	0	0	-52	0	0	0	2	62	64	-116	116	0	0
2003	-121	53	23	0	0	-45	0	0	0	14	116	130	-175	175	0	0
2004	-110	53	23	0	0	-34	0	0	0	35	175	210	-244	244	0	0
2005	-98	53	23	0	0	-22	0	0	0	60	244	304	-326	326	0	0
2006	-83	53	23	0	0	-7	0	0	0	81	326	407	-414	414	0	0
2007	-64	53	23	0	0	12	0	0	0	81	414	495	-483	483	0	0
2008	-39	53	23	0	0	37	0	0	0	81	483	564	-527	527	0	0
2009	-7	53	23	0	0	69	0	0	0	81	527	608	-539	539	0	0
2010	33	53	23	0	0	109	0	0	0	81	539	620	-511	511	0	0
2011	85	53	23	0	0	161	0	0	0	81	511	592	-432	432	0	0
2012	95	53	23	0	0	171	0	0	0	81	432	513	-341	341	0	0
2013	142	53	23	0	0	218	0	0	0	81	341	422	-204	204	0	0
2014	196	53	23	0	0	272	0	0	0	81	204	285	-13	13	0	0
2015	259	53	23	0	0	335	0	0	0	81	13	95	240	0	240	240
2016	304	53	23	0	0	380	0	0	0	80	0	80	300	0	300	540
2017	352	53	23	0	0	428	0	0	0	79	0	79	348	0	348	888
2018	403	53	23	0	0	479	0	0	0	67	0	67	412	0	412	1,300
2019	458	53	23	0	0	534	0	0	0	46	0	46	487	0	487	1,788
2020	515	53	23	0	0	591	0	0	0	21	0	21	570	0	570	2,358
2021	576	53	23	0	0	652	0	0	0	0	0	0	652	0	652	3,010
2022	641	53	23	0	0	717	0	0	0	0	0	0	717	0	717	3,727
2023	712	53	23	0	0	788	0	0	0	0	0	0	788	0	788	4,514
2024	789	53	23	0	0	865	0	0	0	0	0	0	865	0	865	5,379
Totals	1,329	1,329	548	548	1,215		1,329	285	1,614	1,215						

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