

**Appendix 10-6**

**Material Balance**

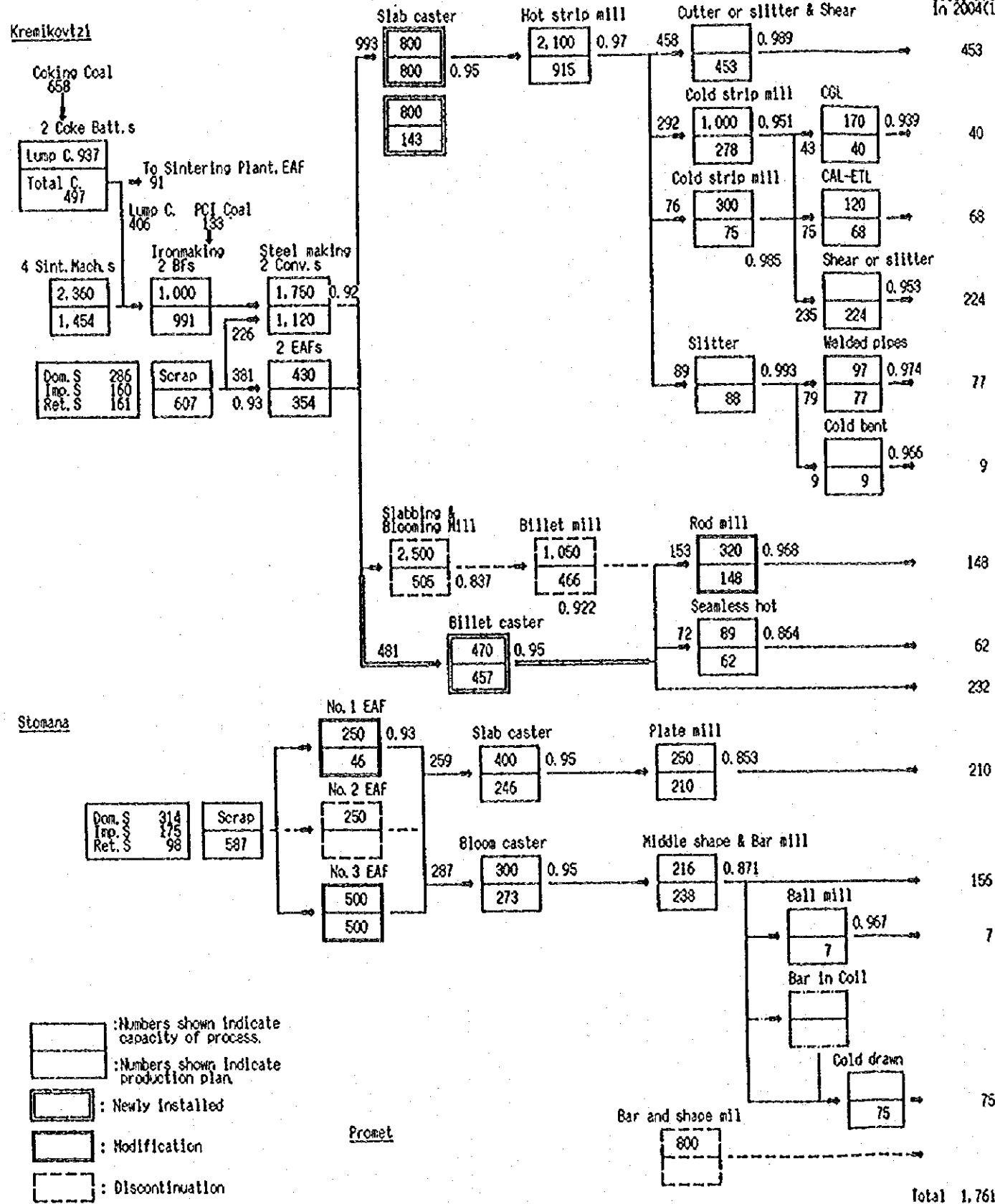
[The page contains extremely faint and illegible text, likely due to low contrast or scanning quality. The text is scattered across the page and does not form any recognizable words or sentences.]

A1160021 Appendix 10-6-1 Material Balance No. A (4) Scenario for Restructuring

Products and production after restructuring

Size of products

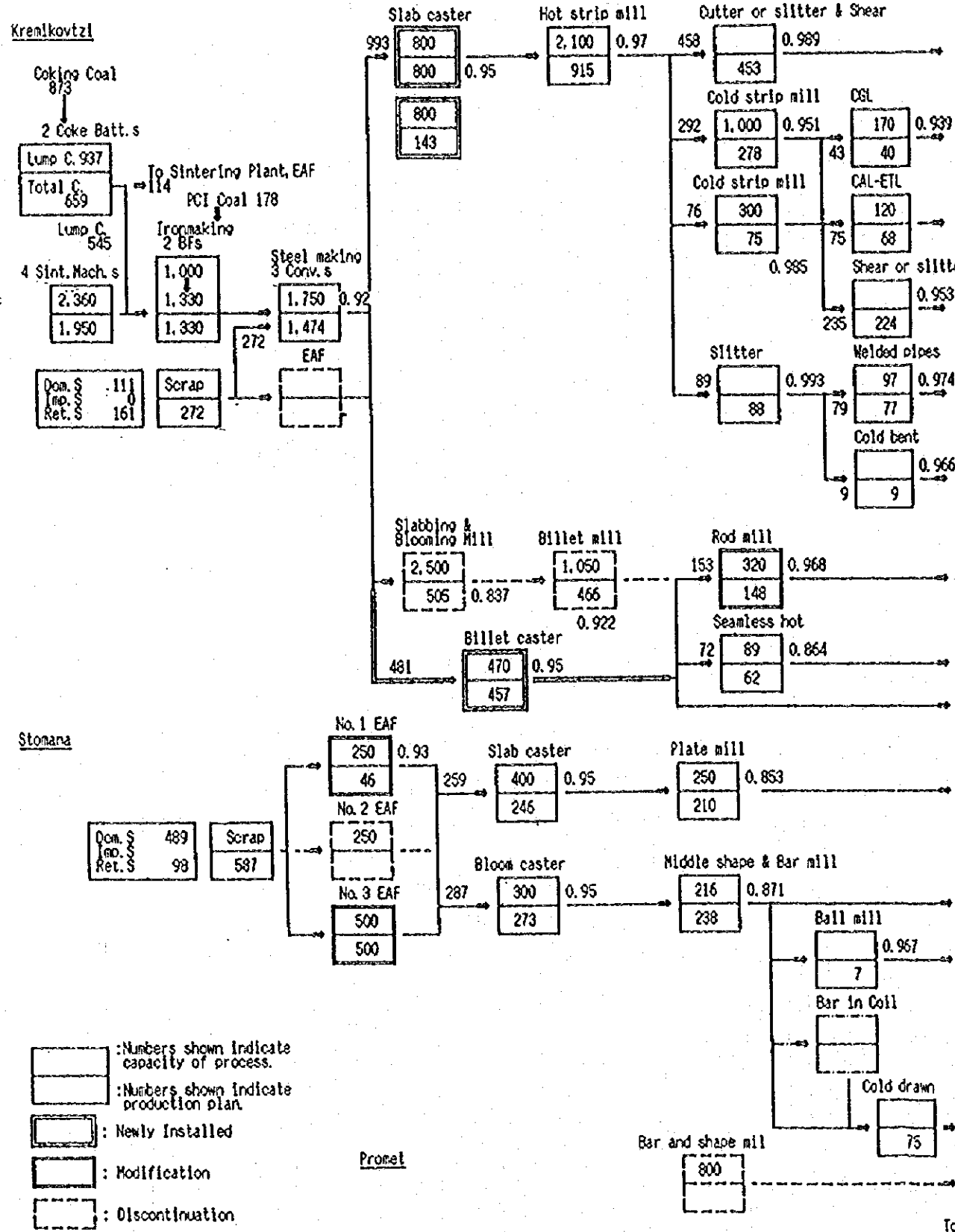
Present and after restructuring



Number of steel products classification	Present	After restructuring
6, 7	Sheet (2.0-2.8)*+(770-1.050)*+(2.3)* (3.0-3.8)*+(770-1.250)*+(2.5)* (4.0-12)*+(770-1.500)*+(2.6)* Strip (3-6)*+(120-600)*+(1200-1.900)*+(740)	Coil (1.100-1.900)*+(850) Checkered plate (4.0-8.0)*+(770-1.250)*+(2.6)*
10	Sheet (0.5-0.63)*+(710-1.000)*+(2)* (0.7-0.8)*+(710-1.100)*+(2)* (1.0-1.5)*+(710-1.250)*+(2.25)* Coil 10(600, 420)	Sheet (0.24, 0.26, 0.28, 0.30, 0.32, 0.36)* Coil
9	*	Plate (0.24-0.5)*+(512/712) Coil (0.24-2.5)*+(720-1.250)*+(10(300 or 600)
8, 11	Sheet (0.5-0.65)*+(720-1.000)*+(2)* (0.7-1.2)*+(720-1.250)*+(2.25)* (1.2-2.0)*+(720-1.250)*+(2.4)* Strip (0.28-2.0)*+(10-500)*+(10(300, 600)	Wide-strip galvanized steel sections with organic coating
15	Sheet with organic coating (0.55-0.63)*+(750-1.000)*+(2.5)* (0.7-0.8)*+(750-1.100)*+(2.5)* (1.0-1.5)*+(720-1.250)*+(2.5)*	Water/gas pipes 10(10-80)*+(17, 2-89) *(2.6-5.4, 2.9-5.4)*
12	General purpose pipes Φ57*(3.35, 4.0)*+(4-8)* Φ83.5*(3.35, 4.0)*+(4-8)* Φ76*(3.5, 4.0)*+(4-8)* Φ89*(3.35, 4.0)*+(4-8)* Tubular scaffold 0.948 Φ48*3.5mm	
4	Equilateral section (100-220)*(40-90)*+(4-6, 114*160)*7 Irough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4 After restructuring (Wire rod and rebar) Φ5.5 - 16	
14	Seamless hot-rolled pipe Φ50-57*(4-10)*+(4-12)* Φ63.5*(4-12)*+(4-12)* Φ70-159*(4-12)*+(4-12)*	Cold drawn pipes Φ(42-75)*(3-5)*+(4-11)*
1	Round billets Φ(100, 120, 140)*(6-12)* Square billets (80/80, 100/100, 115/115, 117/117)*(6-12)*	
6	After restructuring (8-25)*+(1400-2000)*+(3-8)*	Present (8-25)*+(1400-2000)*+(3-8)*
3	Bars Φ(12-20), D10-D20 Φ(50-100)*(3-7)* Shapes L(60x60-100x100)*(6-9)* L(18, 10, 12)*(4-9)* I(80x80-120x120)*(3-3)* FB(25-60)*(100-140)*+(2-8)* Ball-shaped, Trough-shaped, Crute-shaped, Railway connections, Ploughshare, U-shaped	Φ(12-20), D10-D20 Φ(50-100)*(3-7)* L(60x60-100x100)*(6-9)* L(18, 10, 12)*(4-9)* I(80x80-120x120)*(3-8)* FB(25-60)*(100-140)*+(2-8)* Ball-shaped, Trough-shaped, Crute-shaped, Railway connections, Ploughshare, U-shaped
13	Balls Φ(40-120)	Balls Φ(40-120)
16	Round calibrated steel Φ(13-65)*(3-6)*	Round calibrated steel Φ(13-65)*(3-6)*  Φ10-Φ90 L 50x50 - 100x100 L 60x30 - 80x40 Straight

# Appendix 10-6-2 Material Balance No. A-2 Scenario for Restructuring

Products and production after restructuring Size of products



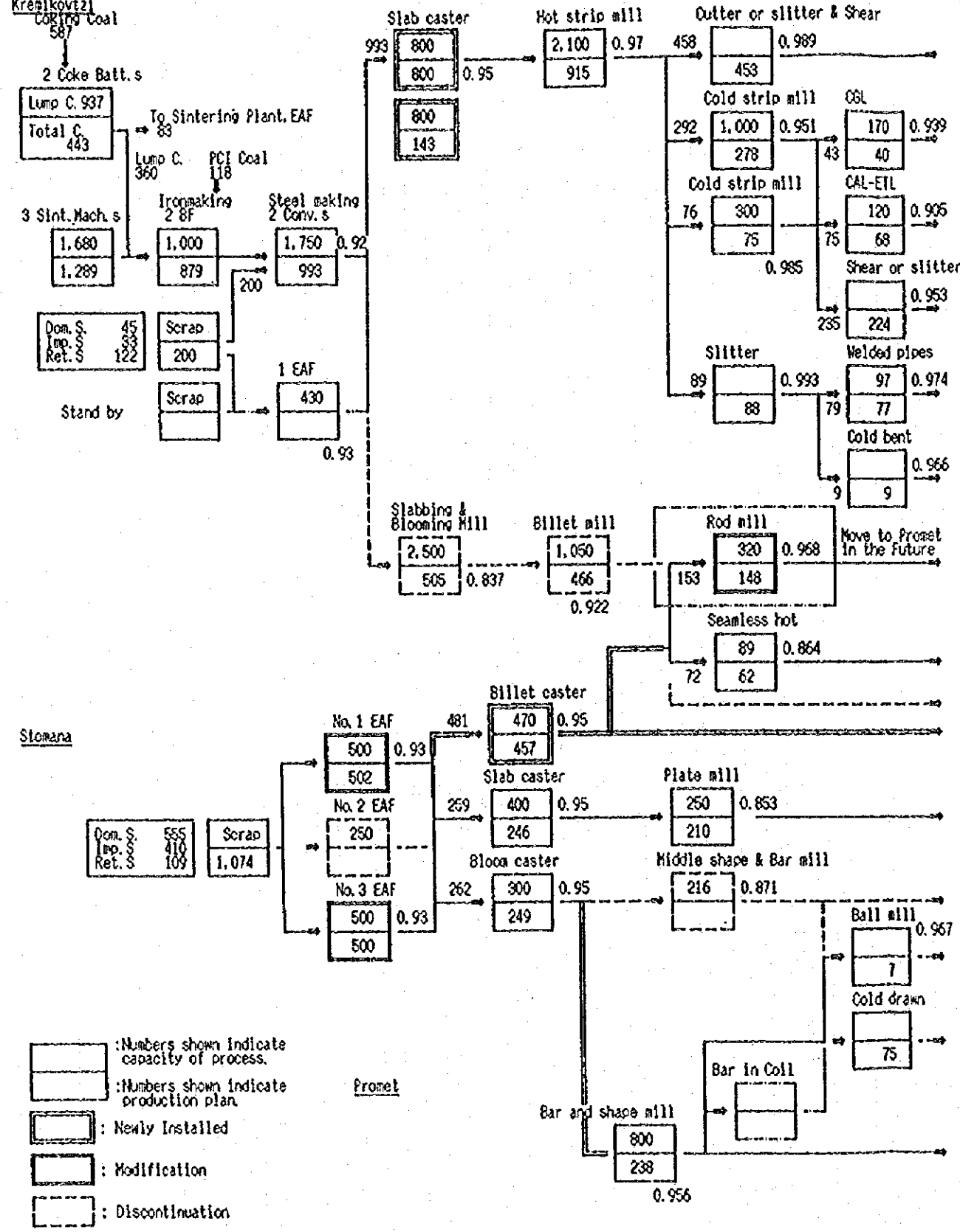
In 2004 (10<sup>3</sup>t/y)

steel products classification

Product No.	Product Name	Production (10 <sup>3</sup> t/y)	Size of products
6, 7	Sheet	453	$(2.0-2.8)^t \times (770-1.050)^m \times (2-3m)^l$ $(3.0-3.8)^t \times (770-1.250)^m \times (2-6m)^l$ $(4.0-12)^t \times (770-1.500)^m \times (2-6m)^l$
	Coil		$(1.100-1.900) \times 10(850)$ $(4.0-8.0)^t \times (770-1.250)^m \times (2-6m)^l$
10	Strip	40	$(3-6)^t \times (120-600)^m \times 10(1200-1.900) \times 10(740)$
9	Sheet	68	$(0.5-0.65)^t \times (710-1.000)^m \times 2m^l$ $(0.7-0.8)^t \times (710-1.100)^m \times 2m^l$ $(1.0-1.5)^t \times (710-1.250)^m \times (2.2.5m)^l$
	Coil		$(0.24, 0.26, 0.28, 0.30, 0.32, 0.36)^t$
8, 11	Strip	224	$(0.5-0.65)^t \times (720-1.000)^m \times 2m^l$ $(0.7-0.8)^t \times (720-1.250)^m \times (2-2.5m)^l$ $(1.2-2.0)^t \times (720-1.250)^m \times (2-4m)^l$
	Plate		$(0.24-0.5)^t \times (512/712)$
	Coil		$(0.24-2.5)^t \times (720-1.250)^m \times 10(300 \text{ or } 600)$
15	Sheet with organic coating	77	$(0.55-0.65)^t \times (750-1.000)^m \times (2-5m)^l$ $(0.7-0.8)^t \times (750-1.100)^m \times (2-5m)^l$ $(1.0-1.5)^t \times (720-1.250)^m \times (2-5m)^l$
	Wide-strip galvanized steel sections with organic coating		
12	General purpose pipes	9	$\Phi 57 \times (3.3.5.4.0)^t \times (4-8m)^l$ $\Phi 63.5 \times (3.3.5.4.0)^t \times (4-8m)^l$ $\Phi 76 \times (3.3.5.4.0)^t \times (4-8m)^l$ $\Phi 89 \times (3.3.5.4.0)^t \times (4-8m)^l$
	Water/gas pipes		$10(19-80) \times 10(17.2-89)$ $\times (2.6-5.4, 2.9-5.4)^t$
	Tubular scaffold		$\Phi 48 \times 3.5m$
4	Equilateral section	148	$(100-220) \times (40-90) \times (4-6), 114 \times 160 \times 7$
	Trough-like section		$223 \times 72 \times (2.5-3.0)$
	Road side fence section		$270 \times 77 \times 4$
	After restructuring (Wire rod and rebar)		$\Phi 5.5 - 16$
14	Seamless hot-rolled pipe	62	$\Phi(50-57) \times (4-10)^t \times (4-12m)^l$ $\Phi 63.5 \times (4-12)^t \times (4-12m)^l$ $\Phi(70-159) \times (4-12)^t \times (4-12m)^l$
	Cold drawn pipes		$\Phi(42-75) \times (3-6)^t \times (4-11m)^l$
1	Round billets	232	$\Phi(100, 120, 140) \times (6-12m)^l$
	Square billets		$(80/80, 100/100, 115/115, 117/117) \times (6-12m)^l$
6	After restructuring	210	$(8-25)^t \times (1400-2000)^m \times (3-8m)^l$
	Present		$(8-25)^t \times (1400-2000)^m \times (3-8m)^l$
3	Bars	156	$\Phi(12-20), \Phi 10-D20$ $\Phi(50-100) \times (3-7m)^l$ $(60 \times 60 - 100 \times 100) \times (6-9m)^l$ $(18, 10, 12) \times (4-9m)^l$ $(80 \times 80 - 120 \times 120) \times (3-8m)^l$ $\Phi(25-60) \times (100-140)^m \times (2-8m)^l$
	Shapes		bell-shaped, trough-shaped, chute-shaped, Railway connections, Ploughshare, U-shaped
13	Balls	7	$\Phi(40-120)$
	Balls		$\Phi(40-120)$
16	Round calibrated steel	75	$\Phi(13-65) \times (3-6m)^l$
	Round calibrated steel		$\Phi(13-65) \times (3-6m)^l$
	Straight		$\Phi 10 - \Phi 90$ $50 \times 50 - 100 \times 100$ $60 \times 30 - 80 \times 40$

Total 1.761

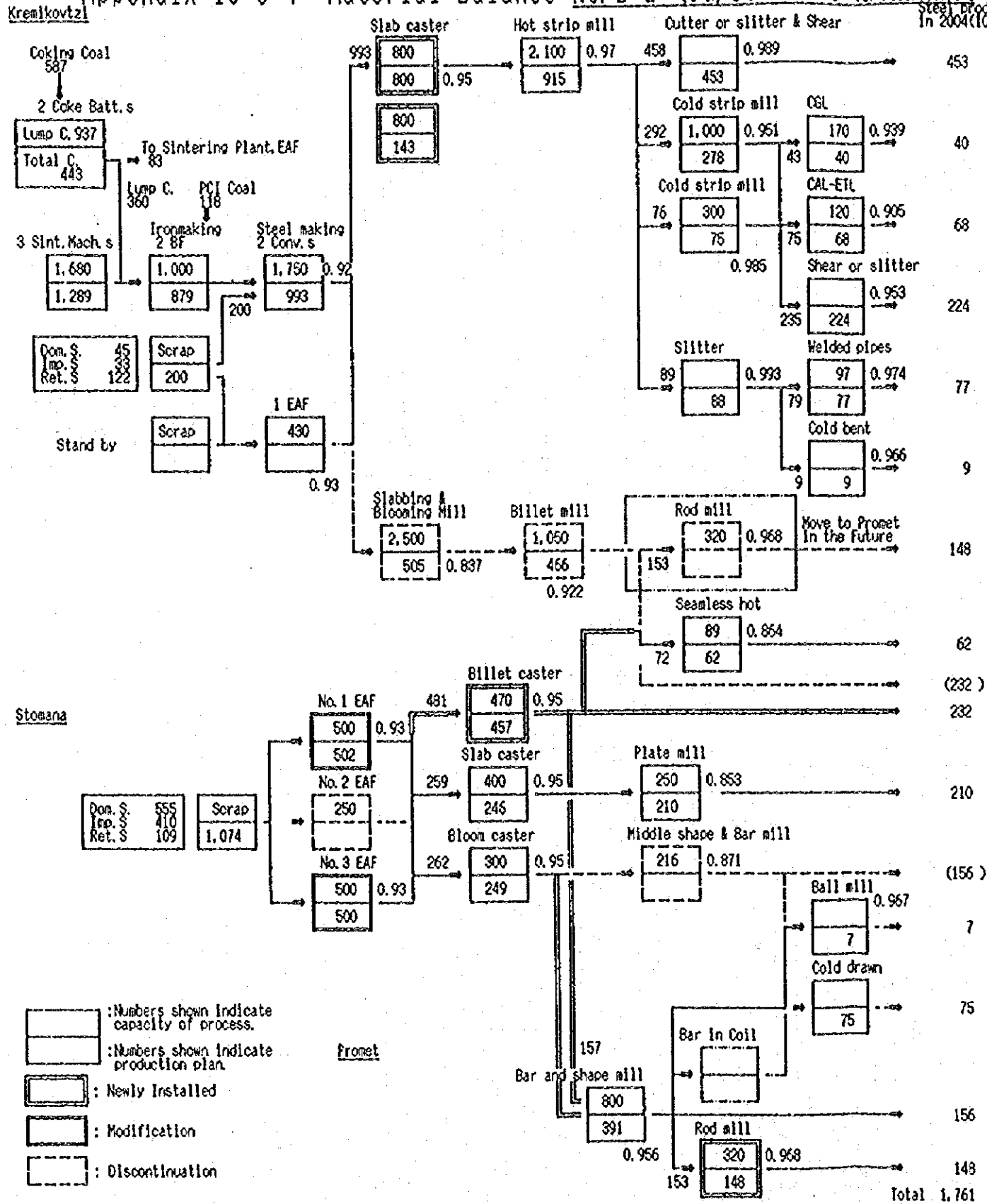
Appendix 10-6-3 Material Balance No. B-1 (3a) Scenario for Restructuring Products and production after restructuring Size of products



Number of steel products classification	Present and after restructuring	Size of products
6, 7	Sheet (2.0-2.8)*+(770-1,050)*+(2-3n) <sup>t</sup> (3.0-3.8)*+(770-1,250)*+(2-6n) <sup>t</sup> (4.0-12)*+(770-1,500)*+(2-6n) <sup>t</sup> Strip (3-6)*+(120-600)*+(1200-1,900)*+(740)	Coil 10(1,100-1,900)*+(850) Checkered plate (4.0-8.0)*+(770-1,250)*+(2-6n) <sup>t</sup>
10	Sheet (0.5-0.63)*+(710-1,000)*+(2n) <sup>t</sup> (0.7-0.8)*+(710-1,100)*+(2n) <sup>t</sup> (1.0-1.5)*+(710-1,250)*+(2, 2.5n) <sup>t</sup> Coil ID(600, 420)	Sheet (0.24, 0.26, 0.28, 0.30, 0.32, 0.35) <sup>t</sup> Coil
9	*	Plate (0.24-0.5)*+(512/712) Coil (0.24-2.5)*+(720-1,250)*+(300 or 600)
8, 11	Sheet (0.5-0.65)*+(720-1,000)*+(2n) <sup>t</sup> (0.7-1.2)*+(720-1,250)*+(2-2.5n) <sup>t</sup> (1.2-2.0)*+(720-1,250)*+(2-4n) <sup>t</sup> Strip (0.28-2.0)*+(10-500)*+(300, 600)	Wide-strip galvanized steel sections with organic coating
15	Sheet with organic coating (0.55-0.63)*+(750-1,000)*+(2-5n) <sup>t</sup> (0.7-0.8)*+(750-1,100)*+(2-5n) <sup>t</sup> (1.0-1.5)*+(720-1,250)*+(2-5n) <sup>t</sup>	Water/gas pipes 10(10-80)*+(17, 2-89) *(2.6-5.4, 2.9-5.4) <sup>t</sup>
12	General purpose pipes Φ57*(3, 3.5, 4.0)*+(4-8n) <sup>t</sup> Φ63.5*(3, 3.5, 4.0)*+(4-8n) <sup>t</sup> Φ76*(3, 3.5, 4.0)*+(4-8n) <sup>t</sup> Φ89*(3, 3.5, 4.0)*+(4-8n) <sup>t</sup> Tubular scaffold 0.948 Φ43*3.5mm	
4	Equilateral section (100-220)*+(40-90)*+(4-6, 114+160)*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4 (Wire rod and rebar) Φ5.5 - 16	
14	Seamless hot-rolled pipe Φ(50-57)*+(2-10)*+(4-12n) <sup>t</sup> Φ63.5*(4-12)*+(4-12n) <sup>t</sup> Φ(70-159)*+(4-12)*+(4-12n) <sup>t</sup>	Cold drawn pipes 10(42-75)*+(3-6)*+(4-11n) <sup>t</sup>
(1)	Round billets Φ(100, 120, 140)*+(6-12n) <sup>t</sup> Square billets (80/80, 100/100, 115/115, 117/117)*+(6-12n) <sup>t</sup>	
6	After restructuring (8-25)*+(1400-2000)*+(3-8n) <sup>t</sup>	Present (8-25)*+(1400-2000)*+(3-8n) <sup>t</sup>
(3)		Φ(12-20), 810-020 Φ(50-100)*+(3-7n) <sup>t</sup> L(60*60-100*100)*+(6-5n) <sup>t</sup> L(18, 10, 12)*+(4-9n) <sup>t</sup> I(80*80-120*120)*+(3-8n) <sup>t</sup> I(25-60)*+(100-140)*+(2-8n) <sup>t</sup> Bell-shaped, Trough-shaped, Crute-shaped, Railway connections, Plowshare, U-shaped
(13)		Balls Φ(40-120)
(16)		Round calibrated steel Φ(13-65)*+(3-6n) <sup>t</sup>
3	Φ10-Φ90 Straight L(50*50-100*100) L(60*30-80*40)	Φ10-Φ90 Straight L(50*50-100*100) L(60*30-80*40)

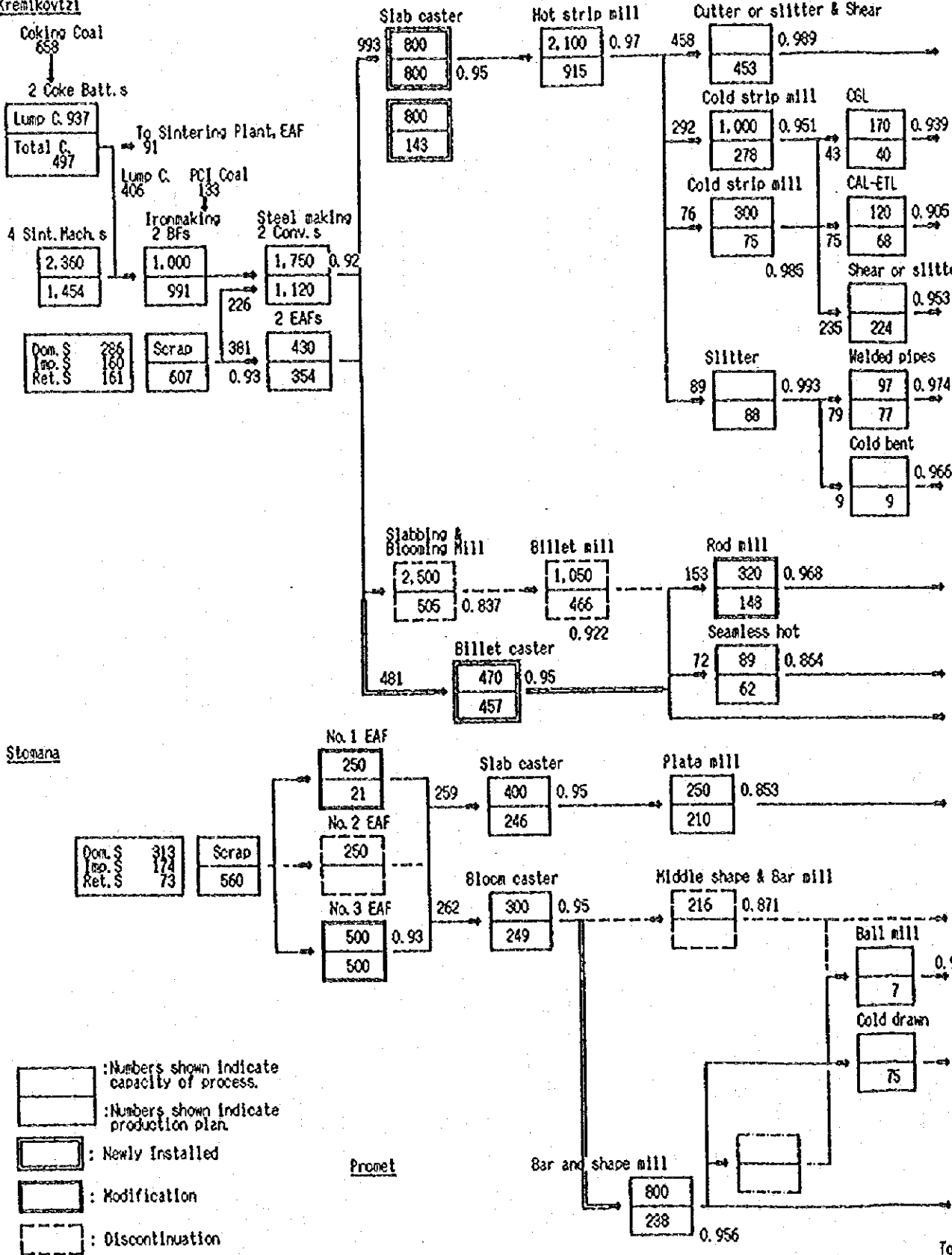
A1160025 Appendix 10-6-4 Material Balance No. B-2 (3a) Scenario for Restructuring

Products and production after restructuring Size of products.



Number of steel products classification	Present and after restructuring
6, 7	Sheet (2.0-2.8)*+(770-1,050)*+(2-3m) <sup>L</sup> (3.0-3.8)*+(770-1,250)*+(2-6m) <sup>L</sup> (4.0-12)*+(770-1,500)*+(2-6m) <sup>L</sup> Strip (3-6)*+(120-600)*+(1200-1,900)*+(740) <sup>L</sup>
10	Sheet (0.5-0.63)*+(710-1,000)*+(2m) <sup>L</sup> (0.7-0.8)*+(710-1,100)*+(2m) <sup>L</sup> (1.0-1.5)*+(710-1,250)*+(2.25m) <sup>L</sup> Coil 10(600, 420)
9	*
8, 11	Sheet (0.5-0.65)*+(720-1,000)*+(2m) <sup>L</sup> (0.7-1.2)*+(720-1,250)*+(2-2.5m) <sup>L</sup> (1.2-2.0)*+(720-1,250)*+(2-4m) <sup>L</sup> Strip (0.28-2.0)*+(10-500)*+(300, 600) <sup>L</sup>
15	Sheet with organic coating (0.55-0.63)*+(750-1,000)*+(2-5m) <sup>L</sup> (0.7-0.8)*+(750-1,100)*+(2-5m) <sup>L</sup> (1.0-1.5)*+(720-1,250)*+(2-5m) <sup>L</sup>
12	General purpose pipes Φ57*(3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ63*(3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ76*(3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ89*(3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Tubular scaffold 0.948 Φ48*3.5m
4	Equilateral section (100-220)*(40-90)*(4-6), 114*160*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*7*4 (Wire rod and rebar) Φ5.5 - 16
14	Seamless hot-rolled pipe Φ(50-57)*(4-10)*+(4-12m) <sup>L</sup> Φ63.5*(4-12)*+(4-12m) <sup>L</sup> Φ(70-159)*(4-12)*+(4-12m) <sup>L</sup>
(1)	Round billets Φ(100, 120, 140)*(6-12m) <sup>L</sup> Square billets (80/80, 100/100, 115/115, 117/117)*(6-12m) <sup>L</sup>
6	After restructuring (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup>
(3)	Present (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup> Φ(12-20), 010-020 Φ(50-100)*(3-7m) <sup>L</sup> L(60×60-100×100)*(6-9m) <sup>L</sup> L(8, 10, 12)*(4-9m) <sup>L</sup> L(80×80-120×120)*(3-8m) <sup>L</sup> L(25-60)*(100-140)*+(2-8m) <sup>L</sup> Bell-shaped, trough-shaped, Crute-shaped, Railway connections, Ploughshare, U-shaped
(13)	Balls Φ(40-120)
(16)	Round calibrated steel Φ(13-65)*(3-6m) <sup>L</sup>
3	Φ10-Φ90 Straight L 50×50-100×100 L 60×30-80×40
4	(Wire rod and rebar) Φ5.5 - 16

Appendix 10-6-5 Material Balance No. C (4C) Scenario for Restructuring



Products and production after restructuring	Size of products Present and after restructuring
Steel production in 2004 (10 <sup>3</sup> t/y)	Number of steel products classification
453	6, 7 → Sheet (2.0-2.8)*+(770-1,050)*+(2-3m) <sup>t</sup> (3.0-3.8)*+(770-1,250)*+(2-6m) <sup>t</sup> (4.0-12)*+(770-1,500)*+(2-6m) <sup>t</sup>
40	10 → Sheet (0.5-0.63)*+(710-1,000)*+2m <sup>t</sup> (0.7-0.8)*+(710-1,100)*+2m <sup>t</sup> (1.0-1.5)*+(710-1,250)*+(2, 2.5m) <sup>t</sup>
68	9 → *
224	8, 11 → Sheet (0.5-0.65)*+(720-1,000)*+2m <sup>t</sup> (0.7-1.2)*+(720-1,250)*+(2-2.5m) <sup>t</sup> (1.2-2.0)*+(720-1,250)*+(2-4m) <sup>t</sup>
77	15 → Sheet with organic coating (0.55-0.63)*+(750-1,000)*+(2-5m) <sup>t</sup> (0.7-0.8)*+(750-1,100)*+(2-5m) <sup>t</sup> (1.0-1.5)*+(720-1,250)*+(2-5m) <sup>t</sup>
9	12 → General purpose pipes Φ57*(3, 3.5, 4.0)*+(4-8m) <sup>t</sup> Φ63.5*(3, 3.5, 4.0)*+(4-8m) <sup>t</sup> Φ76*(3, 3.5, 4.0)*+(4-8m) <sup>t</sup> Φ89*(3, 3.5, 4.0)*+(4-8m) <sup>t</sup> Tubular scaffold 0.948 Φ48*3.5mm
148	4 → Equilateral section (100-220)*(40-90)*(4-6), 114*160*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4 (Wire rod and rebar) Φ5.5 - 16
62	14 → Seamless hot-rolled pipe Φ(50-57)*(4-10)*+(4-12m) <sup>t</sup> Φ63.5*(4-12)*+(4-12m) <sup>t</sup> Φ(70-159)*(4-12)*+(4-12m) <sup>t</sup>
232	1 → Round billets Φ(100, 120, 140)*(6-12m) <sup>t</sup> Square billets (80/80, 100/100, 115/115, 117/117)*(6-12m) <sup>t</sup>
210	6 → After restructuring (8-25)*+(1400-2000)*+(3-8m) <sup>t</sup>
(156)	(3) → Present Φ(12-20), D10-D20 Φ(50-100)*(3-7m) <sup>t</sup> L(80×60-100×100)*(6-9m) <sup>t</sup> L(8, 10, 12)*(4-9m) <sup>t</sup> Φ(80×90-120×120)*(3-8m) <sup>t</sup> Φ(25-60)*+(100-140)*+(2-8m) <sup>t</sup> Bell-shaped, Trough-shaped, Drute-shaped, Railway connections, Ploughshare, U-shaped
7	(13) → Balls Φ(40-120)
75	16 → Round calibrated steel Φ(13-65)*(3-6m) <sup>t</sup>
156	3 → Φ10-Φ90 Straight L 50×50-100×100 L 60×30-80×40

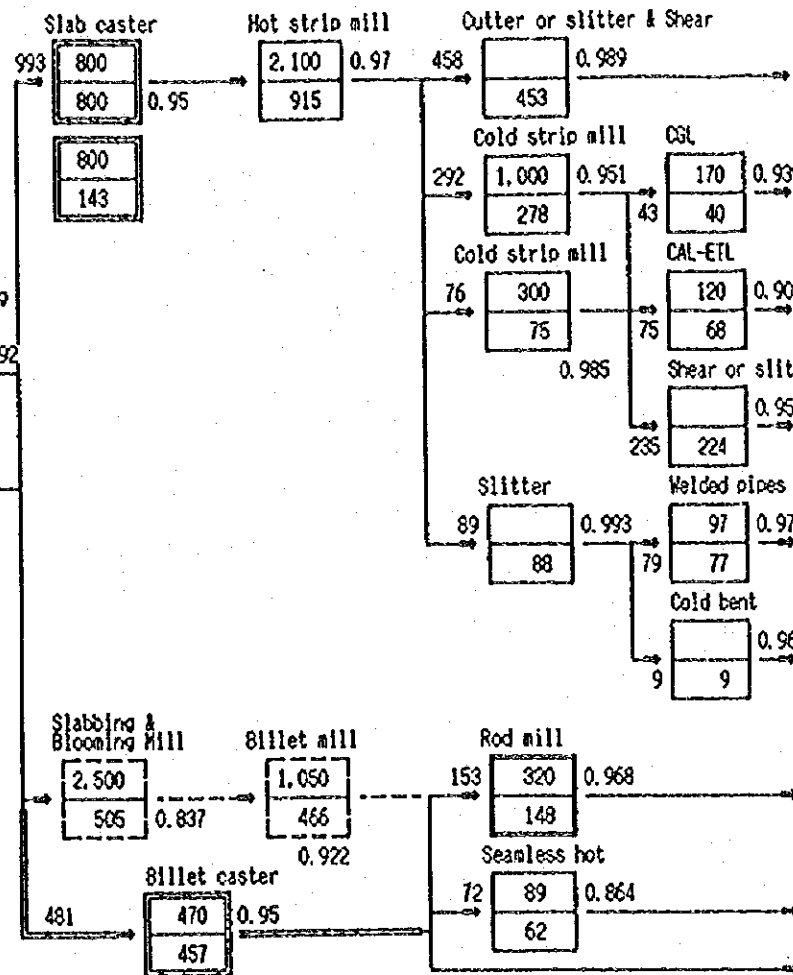
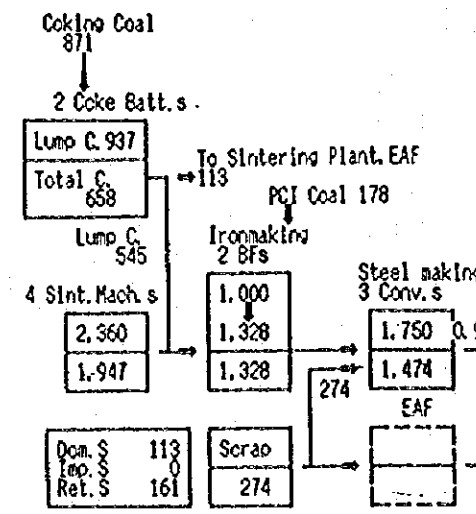
Appendix 10-6-6

Material Balance No. C-2 Scenario for Restructuring

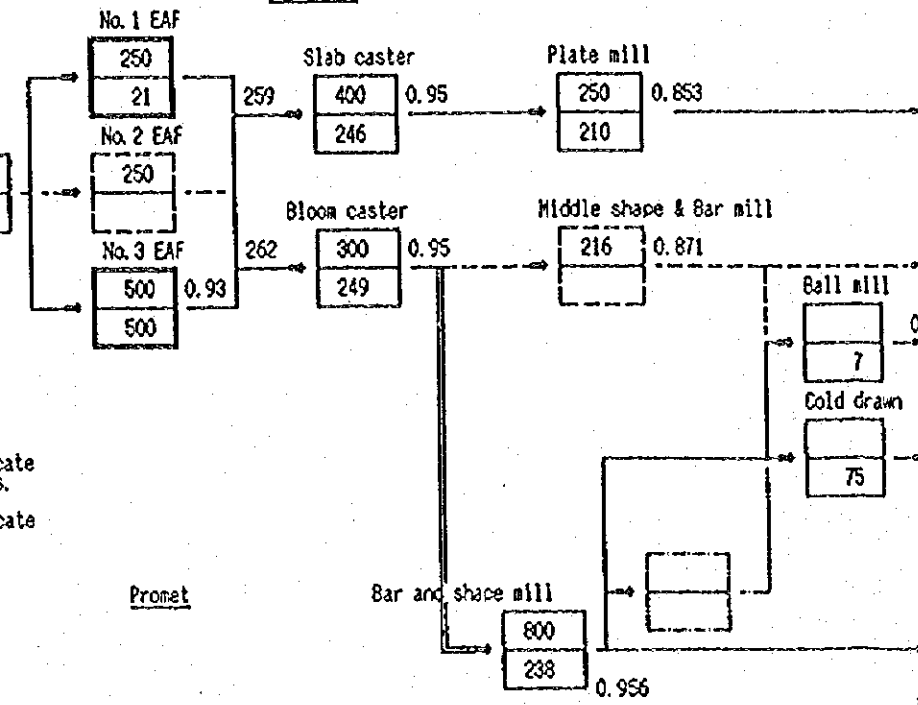
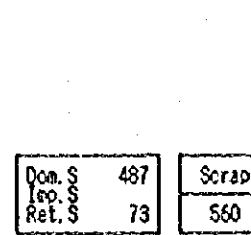
cts and production after restructuring

Size of products

Kremikovtzi



Stomana



Steel production in 2004 (10 <sup>3</sup> t/y)	Number of steel products classification	Present and after restructuring
453	6, 7	Sheet (2.0-2.8)*+(770-1.050)*+(2-3m) <sup>2</sup> (3.0-3.8)*+(770-1.250)*+(2-5m) <sup>2</sup> (4.0-12)*+(770-1.500)*+(2-6m) <sup>2</sup> Strip (3-6)*+(120-600)*+(1200-1.900)*10(740) Coil (1.100-1.900)*10(850) Checkered plate (4.0-8.0)*+(770-1.250)*+(2-6m) <sup>2</sup>
40	10	Sheet (0.5-0.63)*+(710-1.000)*+2m <sup>2</sup> (0.7-0.8)*+(710-1.100)*+2m <sup>2</sup> (1.0-1.5)*+(710-1.250)*+(2.25m) <sup>2</sup> Coil 10(600, 420) Sheet (0.24-0.26, 0.28, 0.30, 0.32, 0.35) <sup>2</sup> Coil
68	9	*
224	8, 11	Sheet (0.5-0.65)*+(720-1.000)*+2m <sup>2</sup> (0.7-1.2)*+(720-1.250)*+(2-2.5m) <sup>2</sup> (1.2-2.0)*+(720-1.250)*+(2-4m) <sup>2</sup> Strip (0.28-2.0)*+(10-500)*+10(300, 600) Plate (0.24-0.5)*+(512/112) Coil (0.24-2.5)*+(720-1.250)*+10(300 or 600)
77	15	Sheet with organic coating (0.55-0.63)*+(750-1.000)*+(2-5m) <sup>2</sup> (0.7-0.8)*+(750-1.100)*+(2-5m) <sup>2</sup> (1.0-1.5)*+(720-1.250)*+(2-5m) <sup>2</sup> Wide-strip galvanized steel sections with organic coating
9	12	General purpose pipes (57*(3, 3.5, 4.0)*+(4-8m) <sup>2</sup> (63*(3, 3.5, 4.0)*+(4-8m) <sup>2</sup> (76*(3, 3.5, 4.0)*+(4-8m) <sup>2</sup> (89*(3, 3.5, 4.0)*+(4-8m) <sup>2</sup> Tubular scaffold 0.948 Φ48*3.5m Water/gas pipes 10(10-80)*+(17, 2-89) *(2.6-5, 4, 2.9-5, 4) <sup>2</sup>
148	4	Equilateral section (100-220)*(40-90)*+(4-5, 114*160)*7 Trough-like section 223*72*2.5-3.0 Road side fence section 270*77*4 (Wire rod and rebar) Φ5.5 - 16
62	14	Seamless hot-rolled pipe Φ(50-57)*+(4-10)*+(4-12m) <sup>2</sup> Φ63.5*(4-12)*+(4-12m) <sup>2</sup> Φ(70-159)*+(4-12)*+(4-12m) <sup>2</sup> Cold drawn pipes 00(42-75)*(3-6)*+(4-11m) <sup>2</sup>
232	1	
210	6	Round billets Φ(100, 120, 140)*+(6-12m) <sup>2</sup> Square billets (80/80, 100/100, 115/115, 117/117)*+(6-12m) <sup>2</sup> After restructuring (8-25)*+(1400-2000)*+(3-8m) <sup>2</sup> Present (8-25)*+(1400-2000)*+(3-8m) <sup>2</sup>
(156)	(3)	Φ(12-20), D10-D20 Φ(50-100)*+(3-7m) <sup>2</sup> I (60×60-100×100)*+(6-9m) <sup>2</sup> I (13, 10, 12)*+(4-9m) <sup>2</sup> C (80×80-120×120)*+(3-8m) <sup>2</sup> F8(25-50)*+(100-140)*+(2-8m) <sup>2</sup> Bell-shaped, Rough-shaped Crute-shaped, Railway connections, Ploughshare, U-shaped
7	(13)	Balls Φ(40-120)
75	16	Round calibrated steel Φ(13-55)*+(3-6m) <sup>2</sup>
156	3	Φ10-Φ90 Straight I 50×50-100×100 I 80×30-80×40 Φ10-Φ90 Straight I 50×50-100×100 I 80×30-80×40
Total 1.761		

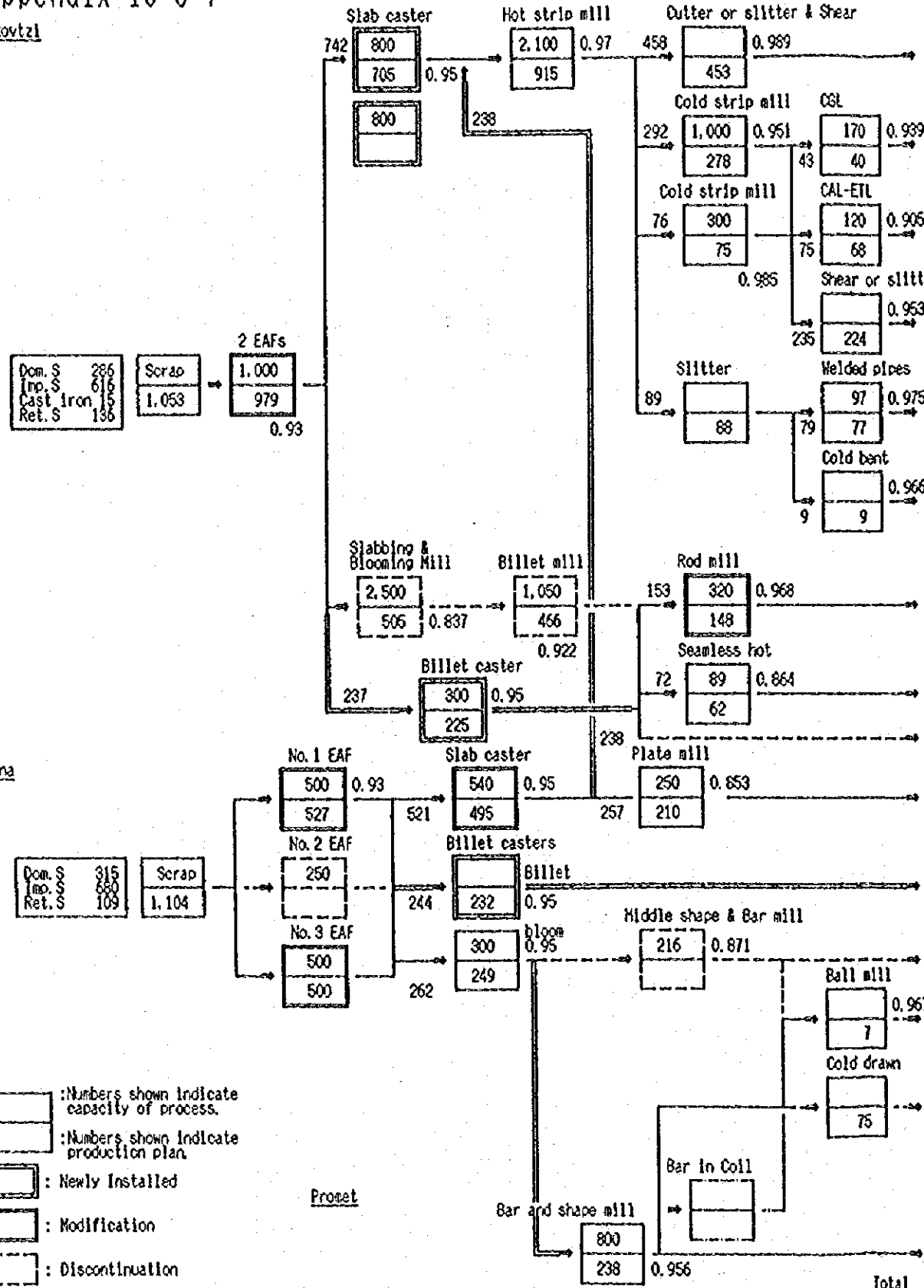
Numbers shown indicate capacity of process.  
 Numbers shown indicate production plan.  
 Newly Installed  
 Modification  
 Discontinuation



A1160024

# Appendix 10-6-7 Material Balance No. 0-1 (3d) Scenario for Restructuring

Kremikovtzi

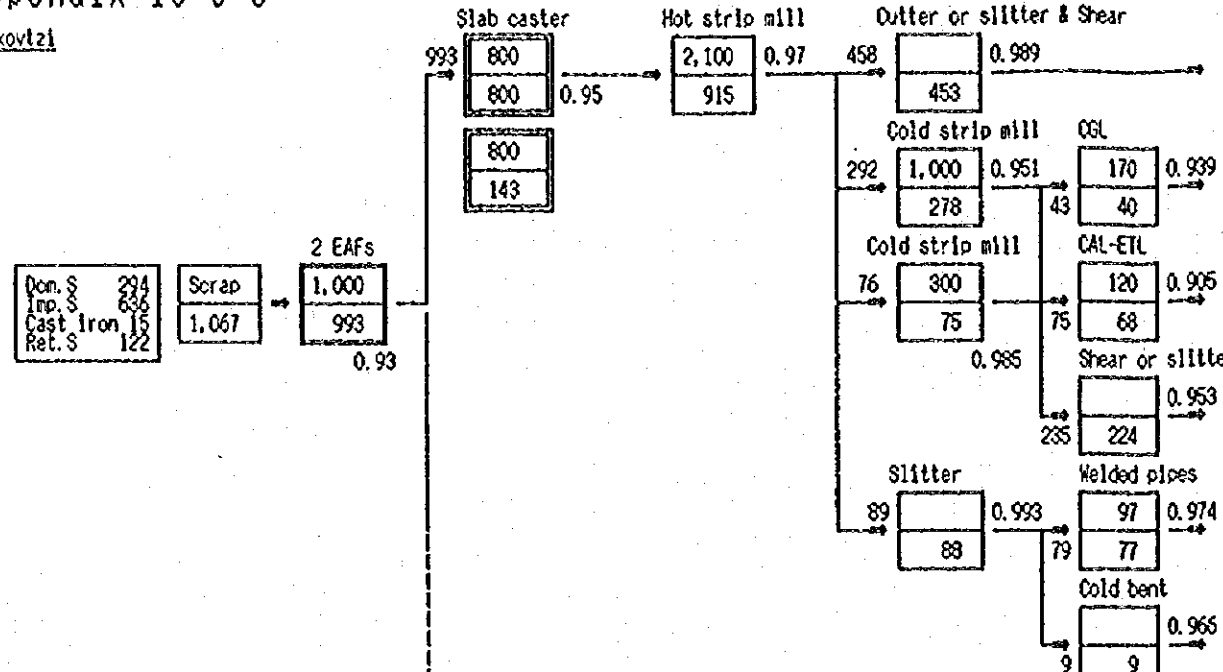


## Products and production after restructuring Size of products Present and after restructuring

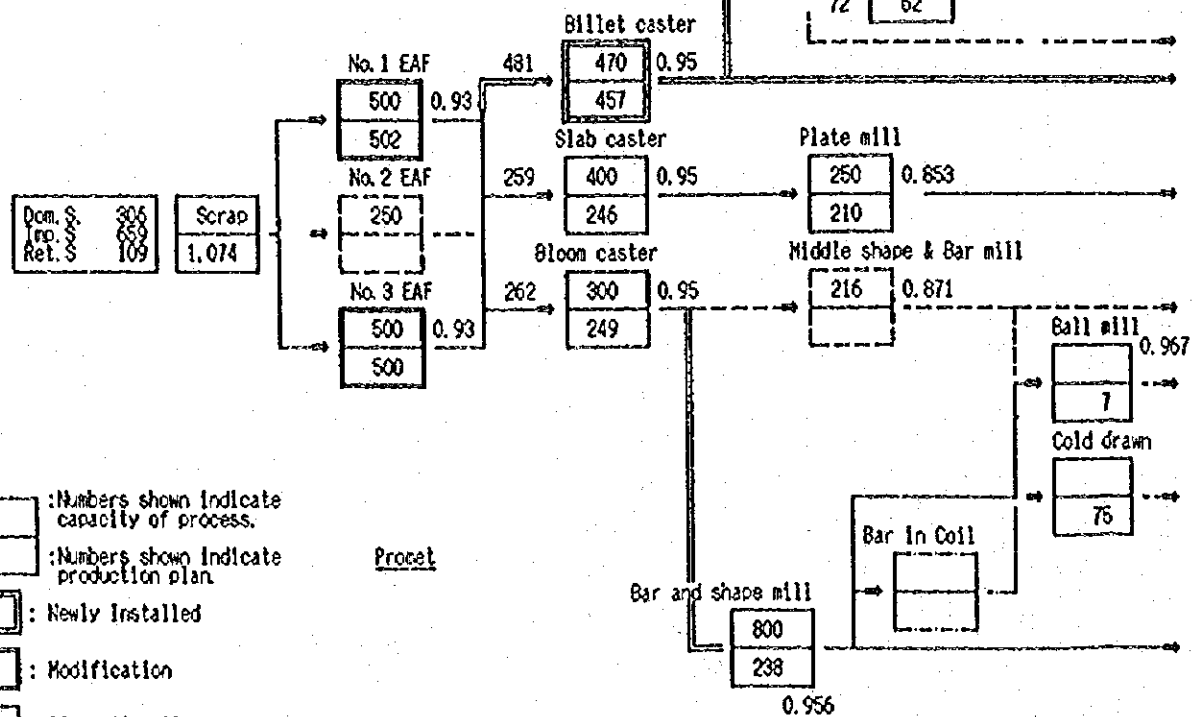
Product Classification	Present	After restructuring
6, 7 → Sheet (2.0-2.8)*+(770-1.050)*+(2-3m) <sup>L</sup> (3.0-3.8)*+(770-1.250)*+(2-6m) <sup>L</sup> (4.0-12)*+(770-1.500)*+(2-6m) <sup>L</sup> Strip (3-5)*+(120-600)*+(1200-1.900)*+10(740)	Coll 00(1.100-1.900)*+10(850) Checkered plate (4.0-8.0)*+(770-1.250)*+(2-6m) <sup>L</sup>	6, 7 → Sheet (2.0-2.8)*+(770-1.050)*+(2-3m) <sup>L</sup> (3.0-3.8)*+(770-1.250)*+(2-6m) <sup>L</sup> (4.0-12)*+(770-1.500)*+(2-6m) <sup>L</sup> Strip (3-5)*+(120-600)*+(1200-1.900)*+10(740)
10 → Sheet (0.5-0.63)*+(710-1.000)*+2m <sup>L</sup> (0.7-0.8)*+(710-1.100)*+2m <sup>L</sup> (1.0-1.5)*+(710-1.250)*+(2.5-5m) <sup>L</sup> Coll 10(600, 420)	* → Sheet (0.24, 0.26, 0.28, 0.30, 0.32, 0.36) <sup>L</sup> Coll	10 → Sheet (0.5-0.63)*+(710-1.000)*+2m <sup>L</sup> (0.7-0.8)*+(710-1.100)*+2m <sup>L</sup> (1.0-1.5)*+(710-1.250)*+(2.5-5m) <sup>L</sup> Coll 10(600, 420)
9 → *	Plate (0.24-0.5)*+(512/712) Coll (0.24-2.5)*+(720-1.250)*+10(300 or 600)	9 → *
8, 11 → Sheet (0.5-0.65)*+(720-1.000)*+2m <sup>L</sup> (0.7-1.2)*+(720-1.250)*+(2-2.5m) <sup>L</sup> (1.2-2.0)*+(720-1.250)*+(2-4m) <sup>L</sup> Strip (0.28-2.0)*+(10-500)*+10(300, 600)	Wide-strip galvanized steel sections with organic coating	8, 11 → Sheet (0.5-0.65)*+(720-1.000)*+2m <sup>L</sup> (0.7-1.2)*+(720-1.250)*+(2-2.5m) <sup>L</sup> (1.2-2.0)*+(720-1.250)*+(2-4m) <sup>L</sup> Strip (0.28-2.0)*+(10-500)*+10(300, 600)
15 → Sheet with organic coating (0.55-0.63)*+(750-1.000)*+(2-5m) <sup>L</sup> (0.7-0.8)*+(750-1.100)*+(2-5m) <sup>L</sup> (1.0-1.5)*+(720-1.250)*+(2-5m) <sup>L</sup>	Water/gas pipes 10(10-80)*+00(17.2-89) +(2.6-5.4, 2.9-5.4) <sup>L</sup>	15 → Sheet with organic coating (0.55-0.63)*+(750-1.000)*+(2-5m) <sup>L</sup> (0.7-0.8)*+(750-1.100)*+(2-5m) <sup>L</sup> (1.0-1.5)*+(720-1.250)*+(2-5m) <sup>L</sup>
12 → General purpose pipes Φ57*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ63*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ76*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ89*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Tubular scaffold 0.948 Φ48*3.5m		12 → General purpose pipes Φ57*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ63*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ76*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Φ89*(3.3, 3.5, 4.0)*+(4-8m) <sup>L</sup> Tubular scaffold 0.948 Φ48*3.5m
4 → Equilateral section (100-220)*(40-90)*(4-6), 114*160*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4 (Wire rod and rebar) Φ5.5 - 16		4 → Equilateral section (100-220)*(40-90)*(4-6), 114*160*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4 (Wire rod and rebar) Φ5.5 - 16
14 → Seamless hot-rolled pipe Φ(50-57)*(4-10)*+(4-12m) <sup>L</sup> Φ(53.5-64)*(4-12)*+(4-12m) <sup>L</sup> Φ(70-159)*(4-12)*+(4-12m) <sup>L</sup>	Cold drawn pipes 00(42-75)*(3-6)*+(4-11m) <sup>L</sup>	14 → Seamless hot-rolled pipe Φ(50-57)*(4-10)*+(4-12m) <sup>L</sup> Φ(53.5-64)*(4-12)*+(4-12m) <sup>L</sup> Φ(70-159)*(4-12)*+(4-12m) <sup>L</sup>
(1) →		(1) →
6 → (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup>	(8-25)*+(1400-2000)*+(3-8m) <sup>L</sup>	6 → (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup>
1 → Round billets Φ(100, 120, 140)*(6-12m) <sup>L</sup> Square billets (80/80, 100/100, 115/115, 117/117)*(6-12m) <sup>L</sup>	Φ(12-20), D10-D20 Φ(50-100)*(3-7m) <sup>L</sup> L(60×60-100×100)*(6-9m) <sup>L</sup> L(8, 10, 12)*(4-9m) <sup>L</sup> □(80×80-120×120)*(3-8m) <sup>L</sup> B(25-60)*+(100-140)*+(2-8m) <sup>L</sup> Ball-shaped, Trough-shaped, Crata-shaped, Railway connections, Ploughshare, U-shaped	1 → Round billets Φ(100, 120, 140)*(6-12m) <sup>L</sup> Square billets (80/80, 100/100, 115/115, 117/117)*(6-12m) <sup>L</sup>
(3) →		(3) →
7 →		7 →
13 →		13 →
16 →		16 →
3 → Φ10-Φ90 Straight L 50×50-100×100 L 60×30-80×40	Φ10-Φ90 Straight L 50×50-100×100 L 60×30-80×40	3 → Φ10-Φ90 Straight L 50×50-100×100 L 60×30-80×40
<b>Total</b> 1,761		<b>Total</b> 1,761

A1160026 Appendix 10-6-8 Material Balance No. D-2 Scenario for Restructuring

Kremikovtzi



Stomana



- : Numbers shown indicate capacity of process.
- : Numbers shown indicate production plan.
- : Newly Installed
- : Modification
- : Discontinuation

Products and production after restructuring

Steel production in 2004 (10<sup>3</sup>t/y)

Number of steel products classification

Size of products

Present and after restructuring

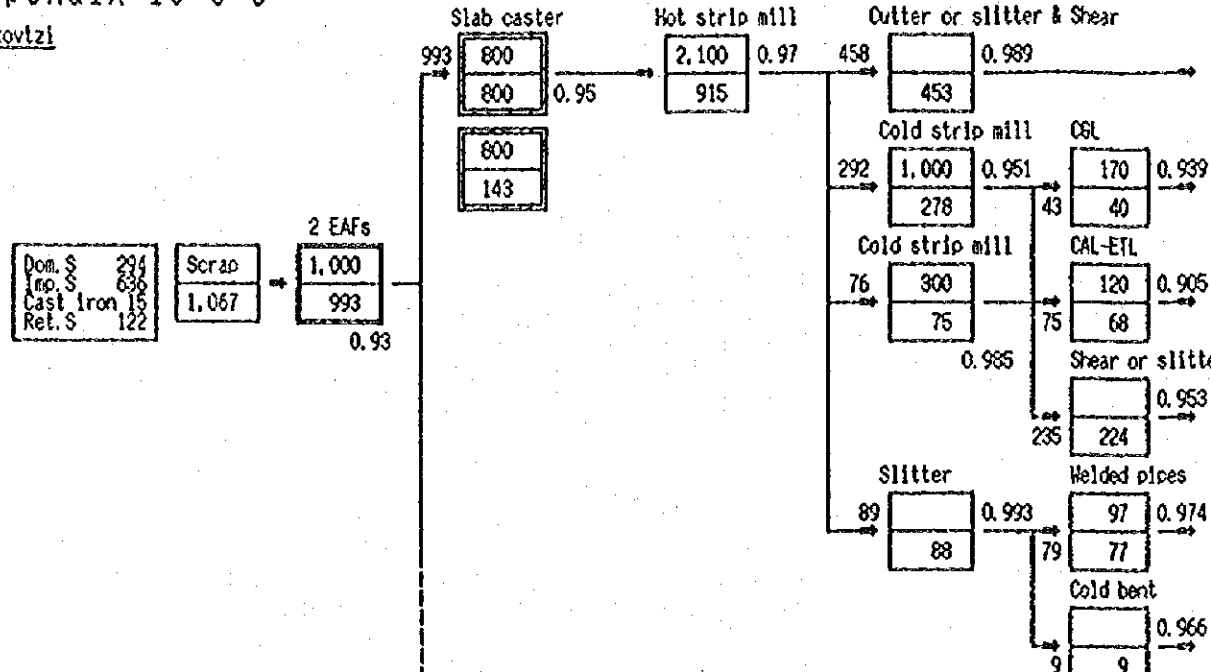
Steel production in 2004 (10 <sup>3</sup> t/y)	Number of steel products classification	Size of products Present and after restructuring
453	6, 7	Sheet (2.0-2.8)*+(770-1.050)*+(2-3m) <sup>L</sup> (3.0-3.8)*+(770-1.250)*+(2-6m) <sup>L</sup> (4.0-12)*+(770-1.500)*+(2-6m) <sup>L</sup> Strip (3-6)*+(120-600)*+(1200-1.900)*+(10(740))
40	10	Sheet (0.5-0.63)*+(710-1.000)*+(2m) <sup>L</sup> (0.7-0.8)*+(710-1.100)*+(2m) <sup>L</sup> (1.0-1.5)*+(710-1.250)*+(2.25m) <sup>L</sup> Coil 10(600, 420)
68	9	*
224	8, 11	Sheet (0.5-0.65)*+(720-1.000)*+(2m) <sup>L</sup> (0.7-1.2)*+(720-1.250)*+(2-2.5m) <sup>L</sup> (1.2-2.0)*+(720-1.250)*+(2-4m) <sup>L</sup> Strip (0.28-2.0)*+(10-500)*+(10(300, 600))
77	15	Sheet with organic coating (0.55-0.63)*+(750-1.000)*+(2-5m) <sup>L</sup> (0.7-0.8)*+(750-1.100)*+(2-5m) <sup>L</sup> (1.0-1.5)*+(750-1.250)*+(2-5m) <sup>L</sup> Wide-strip galvanized steel sections with organic coating
9	12	General purpose pipes Φ57*(3.35, 4.0)*+(4-8m) <sup>L</sup> Φ63*(3.35, 4.0)*+(4-8m) <sup>L</sup> Φ76*(3.35, 4.0)*+(4-8m) <sup>L</sup> Φ89*(3.35, 4.0)*+(4-8m) <sup>L</sup> Tubular scaffold 0.948 Φ48*3.5m Water/gas pipes 10(10-80)*+(17, 2-89) *(2.6-5.4, 2.9-5.4) <sup>L</sup>
148	4	Equilateral section (100-220)*+(40-90)*+(4-6, 114+160)*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4
(232)	(1)	Wire rod and [bar] Φ5.5 - 18
232	14	Seamless hot-rolled pipe Φ50-57*(4-10)*+(4-12m) <sup>L</sup> Φ63.5*(4-12)*+(4-12m) <sup>L</sup> Φ70-159*(4-12)*+(4-12m) <sup>L</sup> Cold drawn pipes 10(42-75)*+(3-6)*+(4-11m) <sup>L</sup>
210	6	Round billets Φ(100, 120, 140)*+(6-12m) <sup>L</sup> Square billets (60/80, 100/100, 115/115, 117/117)*+(6-12m) <sup>L</sup> After restructuring (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup> Present (8-25)*+(1400-2000)*+(3-8m) <sup>L</sup>
(156)	(3)	Φ(12-20), 010-020 Φ(50-100)*+(3-7m) <sup>L</sup> L(60×60) - 100×100)*+(6-9m) <sup>L</sup> L(48, 10, 12)*+(4-9m) <sup>L</sup> C(80-80, 120)*+(3-8m) <sup>L</sup> FB(25-60)*+(100-140)*+(2-8m) <sup>L</sup> Bell-shaped, Trough-shaped Chute-shaped, Railway connectors, Ploughshare, U-shaped
7	(13)	Balls Φ(40-120)
75	(16)	Round calibrated steel Φ(13-65)*+(3-8m) <sup>L</sup>
156	3	Φ10 - Φ90 Straight L(50×50 - 100×100) L(60×30 - 80×40)

Total 1.761

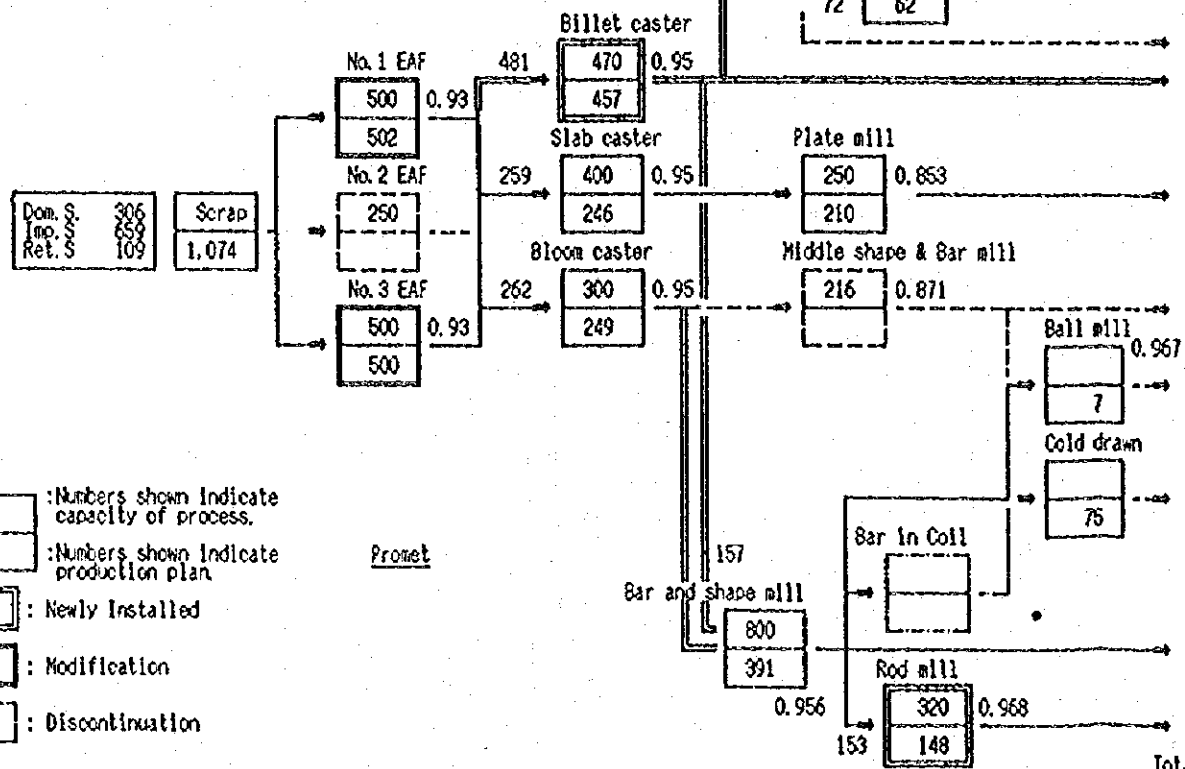
A1160027

Appendix 10-6-9 Material Balance No. D-3 Scenario for Restructuring

Krenikovtzi



Stomana

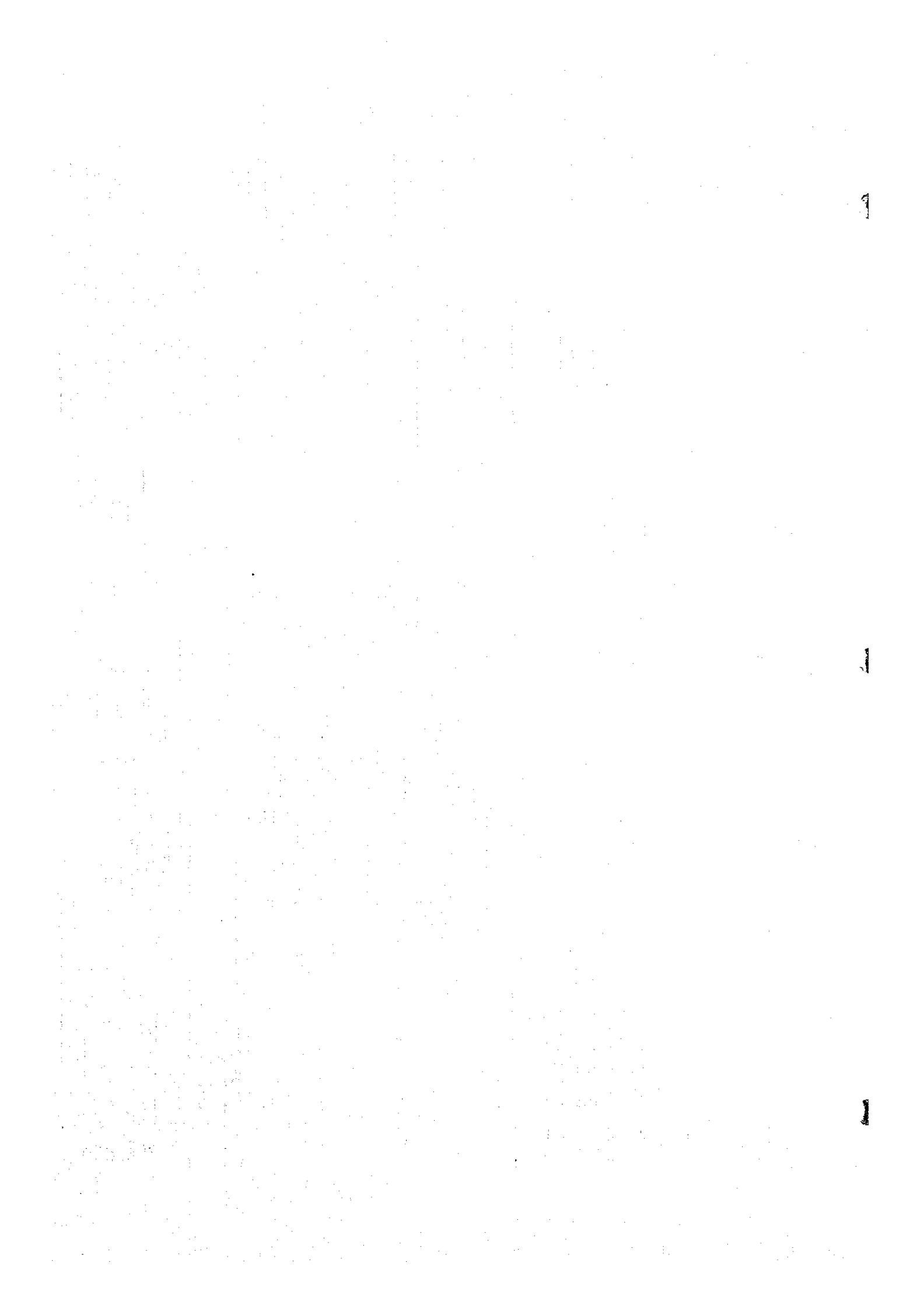


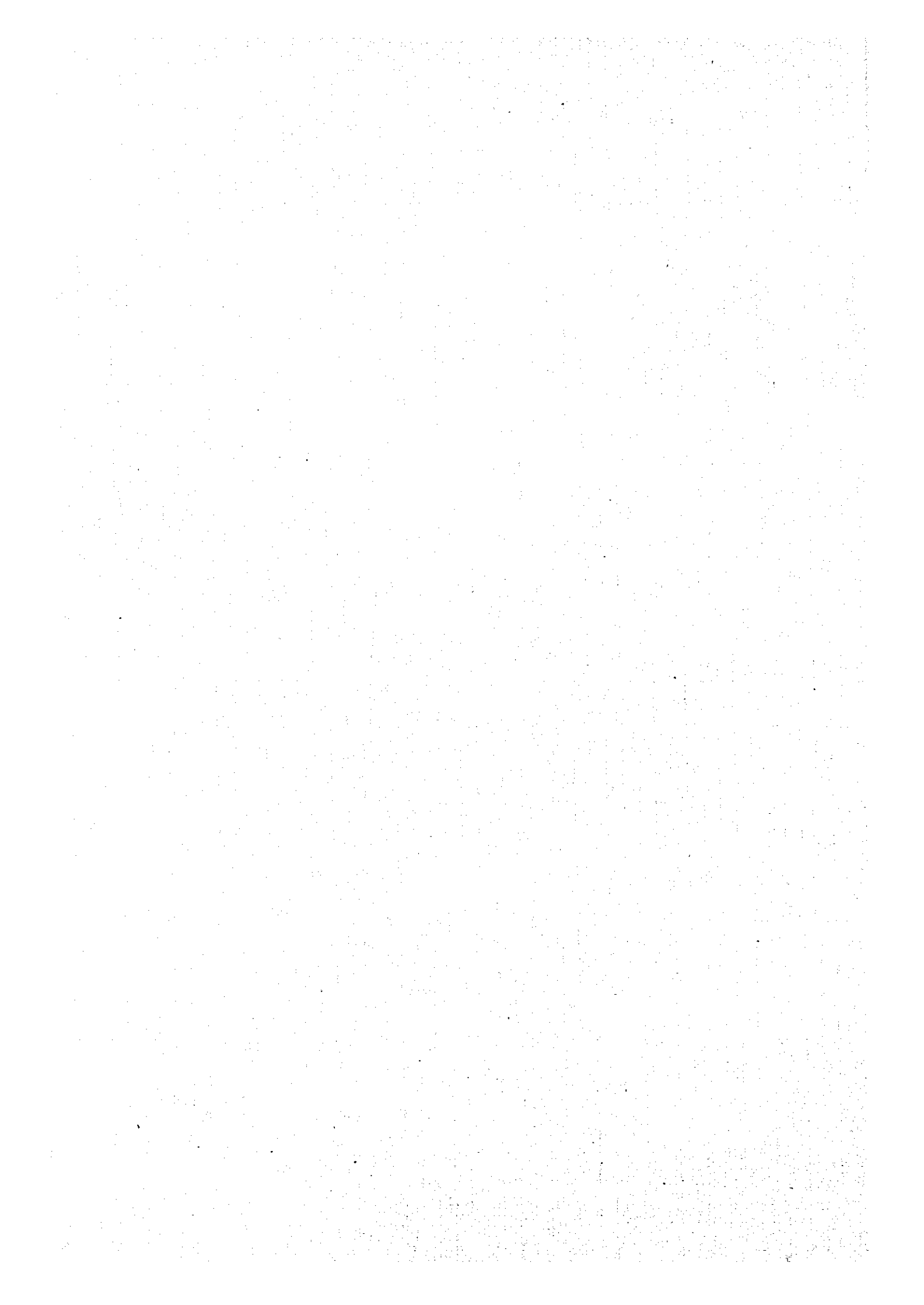
- : Numbers shown indicate capacity of process.
- : Numbers shown indicate production plan.
- : Newly Installed
- : Modification
- : Discontinuation

Products and production after restructuring

Steel production in 2004 (10 <sup>4</sup> t/y)	Number of steel products classification	Size of products Present and after restructuring
453	6, 7	Sheet (2.0-2.8)**(770-1,050)**(2-3m) <sup>t</sup> (3.0-3.8)**(770-1,250)**(2-6m) <sup>t</sup> (4.0-12)**(770-1,500)**(2-6m) <sup>t</sup> Strip (3-6)**(120-600)**(1200-1,900)*ID(740)
40	10	Sheet (0.5-0.63)**(710-1,000)**(2m) <sup>t</sup> (0.7-0.8)**(710-1,000)**(2m) <sup>t</sup> (1.0-1.5)**(710-1,250)**(2.25m) <sup>t</sup> Coil 10(600, 420)
68	9	*
224	8, 11	Sheet (0.5-0.65)**(720-1,000)**(2m) <sup>t</sup> (0.7-1.2)**(720-1,250)**(2-2.5m) <sup>t</sup> (1.2-2.0)**(720-1,250)**(2-4m) <sup>t</sup> Strip (0.28-2.0)**(10-500)**(100, 600)
77	15	Sheet with organic coating (0.55-0.63)**(750-1,000)**(2-5m) <sup>t</sup> (0.7-0.8)**(750-1,000)**(2-5m) <sup>t</sup> (1.0-1.5)**(720-1,250)**(2-5m) <sup>t</sup>
9	12	General purpose pipes Φ57*(3, 3.5, 4.0)**(4-8m) <sup>t</sup> Φ63*(3, 3.5, 4.0)**(4-8m) <sup>t</sup> Φ76*(3, 3.5, 4.0)**(4-8m) <sup>t</sup> Φ89*(3, 3.5, 4.0)**(4-8m) <sup>t</sup> Tubular scaffold 0.948 Φ48*3.5mm
148	4	Equilateral section (100-220)*(40-90)*(4-6, 114*160)*7 Trough-like section 223*72*(2.5-3.0) Road side fence section 270*77*4
62	14	(Wire rod and rebar) Φ5.5 - 16
232	(1)	Seamless hot-rolled pipe Φ(50-57)*(4-10)**(4-12m) <sup>t</sup> Φ(63.5-76)*(4-12)**(4-12m) <sup>t</sup> Φ(70-159)*(4-12)**(4-12m) <sup>t</sup>
210	6	Round billets Φ(100, 120, 140)*(6-12m) <sup>t</sup> Square billets (80/80, 100/100, 115/115, 117/117)*(6-12m) <sup>t</sup>
156	(3)	After restructuring (8-25)**(1800-2000)**(3-8m) <sup>t</sup>
7	(13)	Present (8-25)**(1400-2000)**(3-8m) <sup>t</sup> Φ(12-20), Φ10-Φ20 Φ(50-100)*(3-7m) <sup>t</sup> L(60*60-100*100)*(6-9m) <sup>t</sup> L(18, 10, 12)*(4-9m) <sup>t</sup> L(80*80-120*120)*(3-8m) <sup>t</sup> Φ(25-60)**(100-140)**(2-8m) <sup>t</sup> Bell-shaped, trough-shaped, Crute-shaped, Railway connections, Ploughshare, U-shaped
75	(16)	Balls Φ(40-120) Round calibrated steel Φ(13-65)*(3-6m) <sup>t</sup>
156	3	Φ10-Φ90-Φ100 Straight L 50*50-100*100 L 60*30-80*40
148	4	(Wire rod and rebar) Φ5.5 - 16
Total 1,761		







**Appendix 10-7**

**Operating Conditions after Improvement**

# Appendix 10-7-1 Operating Conditions after Improvement

Kremikovizi Steelworks — 1

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios											
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3			
Iron making	Coke plant	a) Fuel consumption	Mcal/t	600	600	600	600	600	600	600	600	0	0	0	
		Reduction of fuel consumption from 713 to 600 Mcal/t													
		b) Power consumption	kwh/t	45	45	45	45	45	45	45	45	45	0	0	0
		Increase of consumption from 22.3 to 45.0 kwh/t because of environmental pollution prevention from coke plant, and operation gas liquor treatment plant													
		c) Steam for ammonium stripping	T/H	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	
Sintering plant		a) Coke and coal consumption	kg/t	55	55	55	55	55	55	55	55	0	0	0	
		Reduction of consumption from 75 to 55 kg/t													
		b) N gas consumption	Mcal/t	15	15	15	15	15	15	15	15	0	0	0	
		Reduction of gas consumption from 80 to 15 kg/t													
		c) Power consumption	kwh/t	55	55	55	55	55	55	55	55	0	0	0	
		Reduction of electric power consumption from 86.3 to 55.0 kwh/t in spite of installation of environmental pollution prevention facilities													
Blast furnaces		a) Coke ratio	kg/t	530	530	530	530	530	530	530	530	0	0	0	
		Reduction of coke ratio from 765 to 530 kg/t													
		b) Ore ratio	kg/t	1630	1630	1630	1630	1630	1630	1630	1630	1630	0	0	0
		Reduction of ore ratio from 1,850 to 1,630 kg/t													
		-Sintered ore consumption	kg/t	1466	1466	1466	1466	1466	1466	1466	1466	1466	0	0	0
		-Pellet consumption	kg/t	82	82	82	82	82	82	82	82	82	0	0	0
		-Lump ore consumption	kg/t	82	82	82	82	82	82	82	82	82	0	0	0
c) Fuel for hot stove	Mcal/t	600	600	600	600	600	600	600	600	600	0	0	0		
		Reduction of fuel consumption from 1,010 to 600 Mcal/t													
		d) Power consumption	kwh/t	35	35	35	35	35	35	35	35	0	0	0	
		Increase of power from 6.9 to 35 kwh/t because of environmental pollution prevention													



## Appendix 10-7-2 Operating Conditions after Improvement

Kremikovizi Steelworks - 2

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios									
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3	
Iron making	Blast furnaces	e) Coal consumption Reduction of coking coal consumption by PCI system from 530 to 410 kg/t Increase of non-coking coal consumption to 134 kg/t	kg/t	410	410	410	410	410	410	410	0	0	0
				134	134	134	134	134	0	0	0	0	0
Steel making	LD converters	a) Yield: Increase of yield from 89.44% to 92.0% b) O <sub>2</sub> consumption Reduction of consumption from 77.4 to 60.0 Nm <sup>3</sup> /t c) N gas consumption Reduction of consumption from 9.3 to 4.7 Nm <sup>3</sup> /t	%	92	92	92	92	92	0	92	0	0	0
			Nm <sup>3</sup> /t	60	60	60	60	0	60	0	0	0	0
			Nm <sup>3</sup> /t	4.7	4.7	4.7	4.7	0	4.7	0	0	0	0
EAF		a) Yield b) O <sub>2</sub> consumption Increase of consumption from 18.4 to 30.0 Nm <sup>3</sup> /t c) Power consumption Reduction of consumption from 664 to 505 kwh/t for EAF, LF dust catchers, water supply pumps, etc. d) Coke breeze consumption Injection of coke breeze at ratio of 12 kg/t into hot metal (new) e) Carbon electrode consumption Reduction of consumption from 4.0 to 3.0 kg/t for LF f) N gas consumption Reduction of consumption from 5.3 to 3.6 Nm <sup>3</sup> /t g) Refractory consumption Reduction of consumption from 10.69 to 8.0 kg/t	%	93	93	93	93	93	93	93	93	93	93
			Nm <sup>3</sup>	30	30	30	30	30	30	30	30	30	30
			kwh/t	505	505	505	505	505	505	505	505	505	505
			kg/t	12	12	12	12	12	12	12	12	12	12
			kg/t	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
			Nm <sup>3</sup>	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	
			kg/t	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	

### Appendix 10-7-3 Operating Conditions after Improvement

Kremikovtzi Steelworks — 3

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios													
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3					
Steel making	EAF	h) Power consumption Increase of consumption because of waste water	kwh/t	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Slab and billet casters	<Slab caster> a) Yield: Increase of yield from 83.36 to 95.0% by replacing slabbing and blooming mills with slab caster b) Power consumption Increase of consumption to 32 kwh/t including 7 kwh/t of power consumption for water supply pump because of operation of casters c) Fuel consumption Increase of consumption to 50 Mcal/t because of caster operation b) Water consumption Increase of consumption to 10 m <sup>3</sup> /t because of operation of casters e) Refractory consumption Increase of consumption to 2 kg/t because of operation of casters f) Power consumption Increase of consumption because of increase of waste water volume <Billet caster> g) Yield: Increase of yield from 77.1 to 95.0% by replacing slabbing and blooming mills with billet caster h) Power consumption Increase of consumption to ratio of 25 kwh/t i) Fuel consumption Increase of consumption to 50 Mcal/t by operation of casters	% kwh/t Mcal/t m <sup>3</sup> /t kg/t kwh/t %	95	95	95	95	95	95	95	95	95	95	95	95	95	95

## Appendix 10-7-4 Operating Conditions after Improvement

Kremikovtzi Seelworks - 4

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios											
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3			
Steel making	Slab and billet casters	j) Refractory consumption Increase of consumption to 2 kg/t by operation of casters <Discontinuation of ingot making > k) Mold, plate and siphon saving at ratio 15 kg/t l) Refractory ( for EAF ) saving at ratio 5 kg/t <Discontinuation of slabbing and blooming mills > m) Power saving at ratio of 47.1 kwh/t n) Fuel saving at ratio of 258.1 Mcal/t <Discontinuation of billet mill > o) Power consumption Saving of 28.3 kwh/t of power consumption because of billet mill discontinuation	kg/t	2	2	0	0	2	2	0	0	0	0		
			kg/t	0	0	0	0	0	0	0	0	0	0	0	
			kg/t	0	0	0	0	0	0	0	0	0	0	0	0
			kwh/t	0	0	0	0	0	0	0	0	0	0	0	0
			Mcal/t	0	0	0	0	0	0	0	0	0	0	0	0
Hot rolling	Limestone treatment	a) Power consumption Increase of consumption because of strengthening of bag filters for kiln	kwh/t	0.8	0.8	1.2	1.2	0.8	0.8	1.2	1.2	1.2	1.2		
			%	97	97	97	97	97	97	97	97	97	97	97	
Cold strip mills	Pickling lines	a) Yield Increase of total yield of HCL and H <sub>2</sub> SO <sub>4</sub> lines from 95.9 to 97.0%	Mcal/t	450	450	450	450	450	450	450	450	450	450		
			%	97	97	97	97	97	97	97	97	97	97	97	

# Appendix 10-7-5 Operating Conditions after Improvement

Kremikovtzi Steelworks - 5

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios										
				A	A-1	B-1	B-2	C	C-2	D-1	D-2	D-3		
Cold strip mills	Pickling lines	b) Power consumption for HCL line	kwh/t	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
		Reduction of consumption from 117.1 to 12.3 kwh/t												
Cold strip mills		a) Power consumption	kwh/t	105	105	105	105	105	105	105	105	105	105	105
		Reduction of consumption from 130.3 to 105.0 kwh/t for 1200 mill												
		Reduction of consumption from 91.1 to 86.0 kwh/t for 1700 mill	kw/t	86	86	86	86	86	86	86	86	86	86	86
		b) Better quality												
Coating	CAL	c) Power consumption	kwh/t	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
		Increase of consumption because of increase of waste water volume												
Welded pipe		a) Power consumption	kwh/t	40	40	40	40	40	40	40	40	40	40	40
		Reduction of consumption from 189 to 40 kwh/t												
Welded pipe		b) Fuel consumption	Mcal/t	200	200	200	200	200	200	200	200	200	200	200
		Reduction of consumption from 340 to 200 Mcal/t												
		a) Yield : Increase of yield from 96.9 to 97.4%	%	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4	97.4
		b) Strengthening of guarantee quality for export by non destructive examination system												
Welded pipe		<Zinc coating>												
		b) Yield : Increase of yield from 94.8 to 95.3%	%	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	95.3	
		c) Power consumption	kwh/t	78	78	78	78	78	78	78	78	78	78	
		Reduction of consumption from 118 to 78 kwh/t												
Welded pipe		d) Fuel consumption	kwh/t	692	692	692	692	692	692	692	692	692	692	
		Reduction of consumption from 992 to 692 kwh/t												

# Appendix 10-7-6 Operating Conditions after Improvement

Kremikovtzi Steelworks - 6

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios										
				A	A-1	B-1	B-2	C	C-2	D-1	D-2	D-3		
Welded pipe		<ul style="list-style-type: none"> <li>∅ Zinc consumption</li> <li>Reduction of zinc consumption from 77.1 to 67.1 kwh/t</li> </ul>	kwh/t	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1
Rod and shapes	Rod mill	<ul style="list-style-type: none"> <li>a) Yield : Increase of yield from 92.0 to 96.8% by replacement of rod mill</li> <li>b) Fuel consumption</li> <li>Reduction of consumption from 473 to 426 Mcal/t by replacement of rod mill</li> <li>c) Power consumption</li> <li>Increase of consumption from 83 to 166 by replacement of rod mill</li> </ul>	% Mcal/t kwh/t	96.8 426 166	96.8 426 166	0 0 0	0 0 0	96.8 426 166	96.8 426 166	96.8 426 166	96.8 426 166	0 0 0	0 0 0	
Waste water treatment		<ul style="list-style-type: none"> <li>a) Power consumption</li> <li>Modification for waste water treatment</li> <li>b) Active carbon adsorption</li> </ul>	kwh/t US \$ /day	150 2000	150 2000	150 2000	150 2000	150 2000	150 2000	150 2000	150 2000	150 2000	150 2000	

# Appendix 10-7-7 Operating Conditions after Improvement

Stomana Steelworks - 1

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios											
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3			
Steel making	EAF,LF	a) Yield : Increase of yield from 91.5 to 93.0%	%	93	93	93	93	93	93	93	93	93	93	93	93
		b) O <sub>2</sub> consumption Increase of consumption from 24.8 to 30.0 Nm <sup>3</sup> /t	Nm <sup>3</sup> /t	30	30	30	30	30	30	30	30	30	30	30	30
		c) Power consumption Reduction of consumption from 824 to 500 kwh/t	kwh/t	500	500	500	500	500	500	500	500	500	500	500	500
		b) Coke breeze consumption Injection of coke breeze at ratio of 12 kg/t into furnace	kg/t	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
		e) Carbon electrode Reduction of electrode consumption from 5.9 to 3.0 kg/t	kg/t	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		f) N gas consumption Reduction of consumption from 112.0 to 56.0 Mcal/t	Mcal/t	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0
		g) Refractory consumption Reduction of consumption from 23.5 to 10.0 kg/t	kg/t	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
		h) Active carbon adsorption	US \$ /day	500	500	500	500	500	500	500	500	500	500	500	500
Slab, bloom and billet casters	<Slab caster>	a) Yield: Increase of yield from 90.25 to 95.0%	%	95	95	95	95	95	95	95	95	95	95	95	
		b) Power consumption Increase of consumption by 7 kwh/t because of increase of water consumption	kwh/t	7	7	7	7	7	7	7	7	7	7	7	
		c) N gas consumption Increase of consumption from 40.8 to 44.0%	Mcal/t	44	44	44	44	44	44	44	44	44	44	44	
		d) Refractory consumption Reduction of consumption from 6.0 to 3.0 kg/t	kg/t	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	

## Appendix 10-7-8 Operating Conditions after Improvement

Stomana Steelworks - 2

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios									
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3	
Steel making	Slab and billet casters	<Bloom caster>	%	95	95	95	95	95	95	95	95	95	95
		e) Yield: Increase of yield from 90.3 to 95.0%	Mcal/t	44	44	44	44	44	44	44	44	44	44
		f) N gas consumption	kg/t	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		g) Reduction of consumption from 124 to 44 Mcal/t Reduction of refractory consumption from 6.0 to 3.0 kg/t	%	95	95	95	95	95	95	95	95	95	95
		<Billet caster>	kwh/t	0	0	7	7	0	0	0	7	7	7
		h) Yield: Yield of billet caster installed will be 95%.	Mcal/t	0	0	44	44	0	0	44	44	44	44
		i) Power consumption	kg/t	0	0	3.0	3.0	0	0	3.0	3.0	3.0	3.0
		Increase of consumption by 7 kwh/t because of increase of water consumption	%	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
Hot rolling	Plate mill	a) Yield : Increase of yield from 81.71 to 85.30%	%	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
		b) Fuel consumption	Mcal/t	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024	1,024
	Medium section and bar mills	Consumption is 1,024 Mcal/t.	%	87.1	87.1	0	0	0	0	0	0	0	0
		a) Yield : Increase of yield from 82.1 to 87.1% b) Fuel consumption	Mcal/t	745	745	0	0	0	0	0	0	0	0
		Reduction of consumption from 876 to 745 Mcal/t											

# Appendix 10-7-9 Operating conditions after Improvement

Stomana Steelworks - 3

Area	Facilities	Amount of investment and major specifications after improvement	Unit	Number of scenarios											
				A	A-2	B-1	B-2	C	C-2	D-1	D-2	D-3			
Hot rolling	Ball mill	a) Fuel consumption Reduction of N gas consumption from 1,528 to 1,299 Mcal/t	Mcal/t	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299
	Bar mill at Promet	a) Yield : 95.6% b) Fuel consumption: 377 Mcal/t c) Power consumption: 174 kwh/t	% Mcal/t kwh/t	0	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6	95.6
	Rod mill at Promet / Kremikovtzi	a) Yield : Increase of yield from 92.0 to 96.8% by replacement of rod mill b) Fuel consumption Reduction of consumption from 473 to 426 Mcal/t by replacement of rod mill c) Power consumption Increase of yield from 83 to 166 kwh/t by replacement of rod mill	% Mcal/t kwh/t	0	0	96.8	96.8	96.8	0	0	0	0	0	96.8	96.8