

21 SEPTEMBER 2021

Thailand Utilities

The final countdown for WTE feed-in-tariff approvals

Discussion underway for WTE FiT finalisation

According to [Energy News](#), on 14 September 2021, the Energy Ministry and the regulator, the Energy Policy and Planning and Office (EPPO), met with the Bangkok Metropolitan Administration and Department of Local Administration (DLA) to discuss the finalisation of the feed-in-tariff (FiT) for waste-to-energy (WTE) power plants. The final announcement of the FiT for WTE projects under the 400MW quota in the current Power Development Plan 2018 Revision 1 (PDPR1) has been long in the waiting. The FiT is the last jigsaw piece for the country to accelerate the development of WTE power plants to promote waste management and enhance the value of municipal solid waste (MSW) and industrial waste (IW) while still retaining an optimal electricity tariff level, in our view.

Upside from 400MW of WTE plants remains in the pipeline

After successfully implementing 500MW of WTE power plant capacity under PDP 2015, the Energy Regulatory Commission (ERC) has initiated an additional 400MW quota for WTE in the Alternative Energy Development Plan 2018 (AEDP18), which classifies the FiT for WTE into three components: 1) a fixed FiT throughout the power purchase agreement (PPA) lifetime; 2) a variable FiT, which will increase annually based on the core inflation rate of the previous year; and 3) a premium FiT for certain areas to comply with the government's policy to promote the development of biomass, biogas, and waste (MSW and IW) plants.

400MW WTE capacity up for grabs

More than 43 very small power producers (VSPPs) with a combined 361MW capacity and individual capacity sizes smaller than 10MW, have already expressed interest in participating in the "quick win" quota, with 12 VSPPs (86.4MW) already securing PPAs. This has prompted the ERC to initiate an additional 400MW WTE quota. Up to 26 VSPPs with a total capacity of 187MW have been waiting for the FiT finalisation by the ERC, including 8 projects under Siam Power, a subsidiary of TPCH (52.7MW). For WTE small power producers (SPPs) with sizes over 10MW, only one has been granted a PPA (Nonthaburi municipality). Three SPPs under DLA approval have long awaited the FiT approval from the ERC: 1) On-Nuch WTE (30MW capacity, approved in Feb-18); 2) Nongkham WTE (30MW, Feb-18); and 3) Nakornsriathammaratch WTE (19.8MW, Jul-18).

TIIPP, TPCH, and ACE are likely winners

We believe TIIPP, TPCH, and ACE will be the likely winners of the FiT for WTE projects, given their ready-to-build WTE power plants once the agreement with the municipal government for the JV to build and operate WTE power plants is completed.



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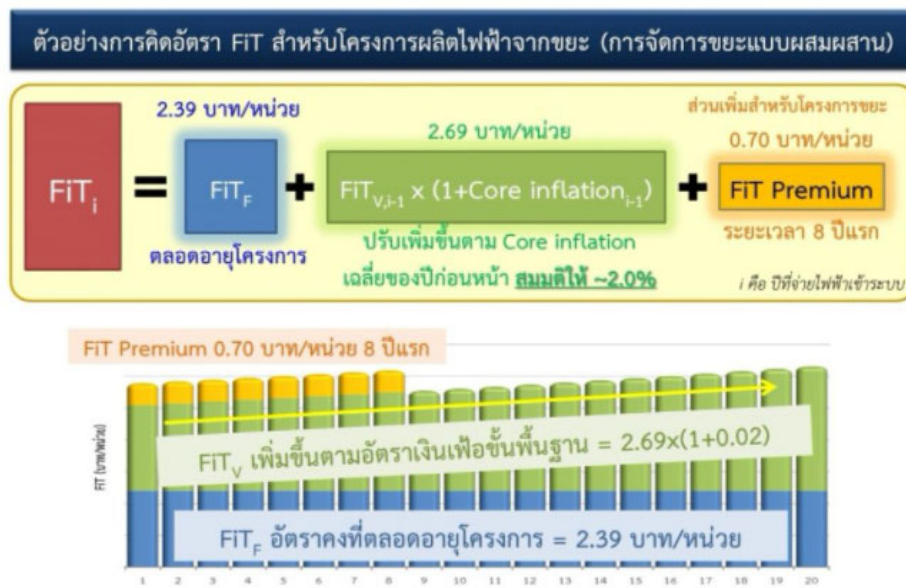
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Exhibit 1: FiT structure for renewable WTE and biomass power plants under PDPR1

Capacity (MW)	FiT (THB/kWh)			Time period	FiT premium (THB/kWh)	
	Fixed rate	Variable rate	Total		Bio-energy project (first 8 years)	Projects in southern part of Thailand (project life)
Waste to energy						
Less than 1 MW	3.13	3.27	6.34	20 years	0.7	0.5
1 - 3 MW	2.61	3.27	5.82	20 years	0.7	0.5
More than 3 MW	2.39	2.74	5.08	20 years	0.7	0.7
Waste-to-energy (Landfill)	5.6	-	5.6	10 years	-	0.5
Biomass						
Less than 1 MW	3.16	2.25	5.34	20 years	0.5	0.5
1 - 3 MW	2.61	2.25	4.82	20 years	0.4	0.5
More than 3 MW	2.39	1.89	4.24	20 years	0.3	0.5
Biogas (wastewater)	3.76	-	3.76	20 years	0.5	0.5
Biogas (energy crops)	2.79	2.6	5.34	20 years	0.5	0.5

Sources: PDP 2018 Rev 1, FSSIA estimates

Exhibit 2: FiT of WTE power plants (more than 3MW capacity size WTE)



Source: EPPO

Exhibit 3: Landfill in Bangkok



Source: Energy News

Corporate Governance report of Thai listed companies 2020

EXCELLENT LEVEL										
AAV	ADVANC	AF	AIRA	AKP	AKR	ALT	AMA	AMATA	AMATAV	ANAN
AOT	AP	ARIP	ARROW	ASP	BAFS	BANPU	BAY	BCP	BCPG	BDMS
BEC	BEM	BGRIM	BIZ	BKI	BLA	BOL	BPP	BRR	BTS	BWG
CENTEL	CFRESH	CHEWA	CHO	CIMBT	CK	CKP	CM	CNT	COL	COMAN
COTTO	CPALL	CPF	CPI	CPN	CSS	DELTA	DEMCO	DRT	DTAC	DTC
DV8	EA	EASTW	ECF	ECL	EGCO	EPG	ETE	FNS	FPI	FPT
FSMART	GBX	GC	GCAP	GEL	GFPT	GGC	GPSC	GRAMMY	GUNKUL	HANA
HARN	HMPRO	ICC	ICHI	III	ILINK	INTUCH	IRPC	IVL	JKN	JSP
JWD	K	KBANK	KCE	KKP	KSL	KTB	KTC	LANNA	LH	LHFG
LIT	LPN	MAKRO	MALEE	MBK	MBKET	MC	MCOT	METCO	MFEC	MINT
MONO	MOONG	MSC	MTC	NCH	NCL	NEP	NKI	NOBLE	NSI	NVD
NYT	OISHI	ORI	OTO	PAP	PCSGH	PDJ	PG	PHOL	PLANB	PLANET
PLAT	PORT	PPS	PR9	PREB	PRG	PRM	PSH	PSL	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QTC	RATCH	RS	S	S & J	SAAM
SABINA	SAMART	SAMTEL	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SDC
SEAFCO	SEAOIL	SE-ED	SELIC	SENA	SIRI	SIS	SITHAI	SMK	SMPC	SNC
SONIC	SORKON	SPALI	SPI	SPRC	SPVI	SSSC	SST	STA	SUSCO	SUTHA
SVI	SYMC	SYNTEC	TACC	TASCO	TCAP	TFMAMA	THANA	THANI	THCOM	THG
THIP	THRE	THREL	TIP	TIPCO	TISCO	TK	TKT	TTB	TMILL	TNDT
TNL	TOA	TOP	TPBI	TQM	TRC	TRC	TSC	TSR	TSTE	TSTH
TTCL	TTW	TU	TVD	TVI	TVO	TWPC	U	UAC	UBIS	UV
VGI	VIH	WACOAL	WAVE	WHA	WHAUP	WICE	WINNER	TRUE		

VERY GOOD LEVEL										
2S	ABM	ACE	ACG	ADB	AEC	AEONTS	AGE	AH	AHC	AIT
ALLA	AMANAHA	AMARIN	APCO	APCS	APURE	AQUA	ASAP	ASEFA	ASIA	ASIAN
ASIMAR	ASK	ASN	ATP30	AUCT	AWC	AYUD	B	BA	BAM	BBL
BFIT	BGC	BJC	BJCHI	BROOK	BTW	CBG	CEN	CGH	CHARAN	CHAYO
CHG	CHOTI	CHOW	CI	CIG	CMC	COLOR	COM7	CPL	CRC	CRD
CSC	CSP	CWT	DCC	DCON	DDD	DOD	DOHOME	EASON	EE	ERW
ESTAR	FE	FLOYD	FN	FORTH	FSS	FTE	FVC	GENCO	GJS	GL
GLAND	GLOBAL	GLOCON	GPI	GULF	GYT	HPT	HTC	ICN	IFS	ILM
IMH	INET	INSURE	IRC	IRCP	IT	ITD	ITEL	J	JAS	JCK
JCKH	JMART	JMT	KBS	KCAR	KGI	KIAT	KOOL	KTIS	KWC	KWM
L&E	LALIN	LDC	LHK	LOXLEY	LPH	LRH	LST	M	MACO	MAJOR
MBAX	MEGA	META	MFC	MGT	MILL	MITSIB	MK	MODERN	MTI	MVP
NETBAY	NEX	NINE	NTV	NWR	OCC	OGC	OSP	PATO	PB	PDG
PDI	PICO	PIMO	PJW	PL	PM	PPP	PRIN	PRINC	PSTC	PT
QLT	RCL	RICHY	RML	RPC	RWI	S11	SALEE	SAMCO	SANKO	SAPPE
SAWAD	SCI	SCP	SE	SEG	SFP	SGF	SHR	SIAM	SINGER	SKE
SKR	SKY	SMIT	SMT	SNP	SPA	SPC	SPCG	SR	SRICHA	SSC
SSF	STANLY	STI	STPI	SUC	SUN	SYNEX	T	TAE	TAKUNI	TBSP
TCC	TCMC	TEAM	TEAMG	TFG	TIGER	TITLE	TKN	TKS	TM	TMC
TMD	TMI	TMT	TNITY	TNP	TNR	TOG	TPA	TPAC	TPCORP	TPOLY
TPS	TRITN	TRT	TRU	TSE	TVT	TWP	UEC	UMI	UOBKH	UP
UPF	UPOIC	UT	UTP	UWC	VL	VNT	VPO	WIJK	WP	XO
YUASA	ZEN	ZIGA	ZMICO							

GOOD LEVEL										
7UP	A	ABICO	AJ	ALL	ALUCON	AMC	APP	ARIN	AS	AU
B52	BC	BCH	BEAUTY	BGT	BH	BIG	BKD	BLAND	BM	BR
BROCK	BSBM	BSM	BTNC	CAZ	CCP	CGD	CITY	CMAN	CMO	CMR
CPT	CPW	CRANE	CSR	D	EKH	EP	ESSO	FMT	GIFT	GREEN
GSC	GTB	HTECH	HUMAN	IHL	INOX	INSET	IP	JTS	JUBILE	KASET
KCM	KKC	KUMWEL	KUN	KWG	KYE	LEE	MATCH	MATI	M-CHAI	MCS
MDX	MJD	MM	MORE	NC	NDR	NER	NFC	NNCL	NPK	NUSA
OCEAN	PAF	PF	PK	PLE	PMTA	POST	PPM	PRAKIT	PRECHA	PRIME
PROUD	PTL	RBF	RCI	RJH	ROJNA	RP	RPH	RSP	SF	SFLEX
SGP	SISB	SKN	SLP	SMART	SOLAR	SPG	SQ	SSP	STARK	STC
SUPER	SVOA	TC	TCCC	THMUI	TIW	TNH	TOPP	TPCH	TIPIP	TPLAS
TTI	TYCN	UKEM	UMS	VCOM	VRANDA	WIN	WORK	WPH		

Description

Score Range

Excellent

90-100

Very Good

80-89

Good

70-79

Disclaimer:

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The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive; ** delisted

Source: Thai Institute of Directors Association (IOD); FSSIA's compilation

Anti-corruption Progress Indicator 2020

CERTIFIED										
2S	ADVANC	AI	AIE	AIRA	AKP	AMA	AMANAH	AP	AQUA	ARROW
ASK	ASP	AYUD	B	BAFS	BANPU	BAY	BBL	BCH	BCP	BCPG
BGC	BGRIM	BJCHI	BKI	BLA	BPP	BROOK	BRR	BSBM	BTS	BWG
CEN	CENTEL	CFRESH	CGH	CHEWA	CHOTI	CHOW	CIG	CIMBT	CM	CMC
COL	COM7	CPALL	CPF	CPI	CPN	CSC	DCC	DELTA	DEMCO	DIMET
DRT	DTAC	DTC	EASTW	ECL	EGCO	FE	FNS	FPI	FPT	FSS
FTE	GBX	GC	GCAP	GEL	GFPT	GGC	GJS	GPSC	GSTEEL	GUNKUL
HANA	HARN	HMPRO	HTC	ICC	ICHI	IFS	INET	INSURE	INTUCH	IRPC
ITEL	IVL	K	KASET	KBANK	KBS	KCAR	KCE	KGI	KKP	KSL
KTB	KTC	KWC	L&E	LANNA	LHFG	LHK	LPN	LRH	M	MAKRO
MALEE	MBAX	MBK	MBKET	MC	MCOT	MFC	MFEC	MINT	MONO	MOONG
MPG	MSC	MTC	MTI	NBC	NEP	NINE	NKI	NMG	NNCL	NSI
NWR	OCC	OCEAN	OGC	ORI	PAP	PATO	PB	PCSGH	PDG	PDI
PDJ	PE	PG	PHOL	PL	PLANB	PLANET	PLAT	PM	PPP	PPPM
PPS	PREB	PRG	PRINC	PRM	PSH	PSL	PSTC	PT	PTG	PTT
PTTEP	PTTGC	PYLON	Q-CON	QH	QLT	QTC	RATCH	RML	RWI	S & J
SABINA	SAT	SC	SCB	SCC	SCCC	SCG	SCN	SEAOIL	SE-ED	SELIC
SENA	SGP	SIRI	SITHAI	SMIT	SMK	SMPC	SNC	SNP	SORKON	SPACK
SPC	SPI	SPRC	SRICHA	SSF	SSSC	SST	STA	SUSCO	SVI	SYNTEC
TAE	TAKUNI	TASCO	TBSP	TCAP	TCMC	TFG	TFI	TFMAMA	THANI	THCOM
THIP	THRE	THREL	TIP	TIPCO	TISCO	TKT	TTB	TMD	TMILL	TMT
TNITY	TNL	TNP	TNR	TOG	TOP	TPA	TPCORP	TPP	TRU	TSC
TSTH	TTCL	TU	TVD	TVI	TVO	TWPC	U	UBIS	UEC	UKEM
UOBKH	UWC	VGI	VIH	VNT	WACOAL	WHA	WHAUP	WICE	WIJK	XO
ZEN	TRUE									

DECLARED										
7UP	ABICO	AF	ALT	AMARIN	AMATA	AMATAV	ANAN	APURE	B52	BKD
BM	BROCK	BUI	CHO	CI	COTTO	DDD	EA	EFORL	EP	ERW
ESTAR	ETE	EVER	FSMART	GPI	ILINK	IRC	J	JKN	JMART	JMT
JSP	JTS	KWG	LDC	MAJOR	META	NCL	NOBLE	NOK	PK	PLE
ROJNA	SAAM	SAPPE	SCI	SE	SHANG	SINGER	SKR	SPALI	SSP	STANLY
SUPER	SYNEX	THAI	TKS	TOPP	TRITN	TTA	UPF	UV	WIN	ZIGA

Level	
Certified	This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties.
Declared	This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC)

Disclaimer:

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Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of June 24, 2019) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Source: The Securities and Exchange Commission, Thailand; * FSSIA's compilation

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ANALYST(S) CERTIFICATION

Suwat Sinsadok FSS International Investment Advisory Securities Co., Ltd

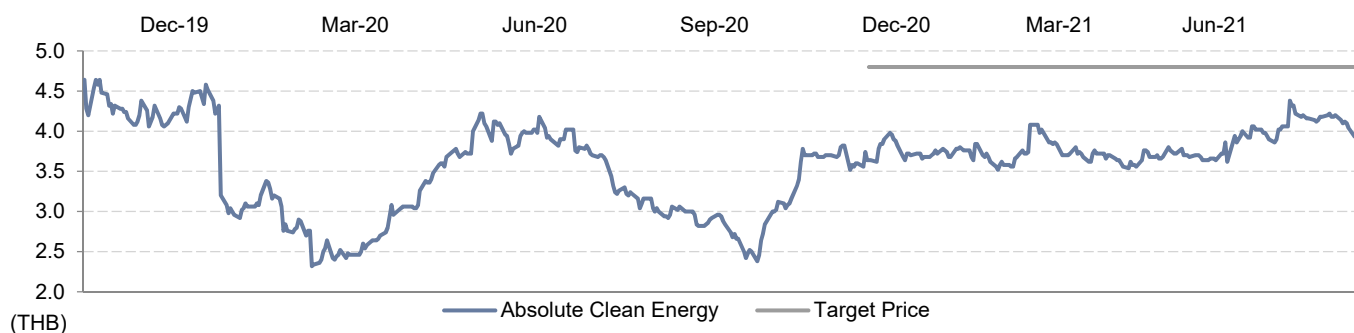
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History of change in investment rating and/or target price

Absolute Clean Energy (ACE TB)



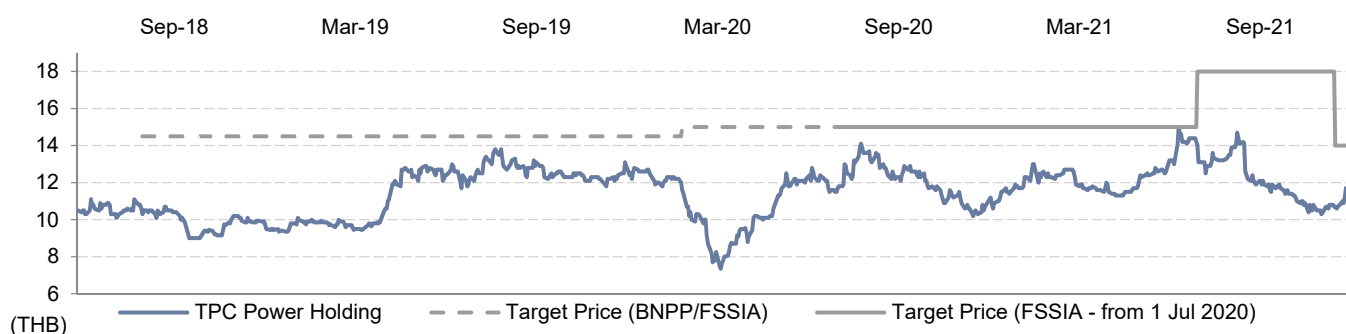
Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
30-Dec-2020	BUY	4.80	-	-	-	-	-	-

Suwat Sinsadok started covering this stock from 30-Dec-2020

Price and TP are in local currency

Source: FSSIA estimates

TPC Power Holding (TPCH TB)



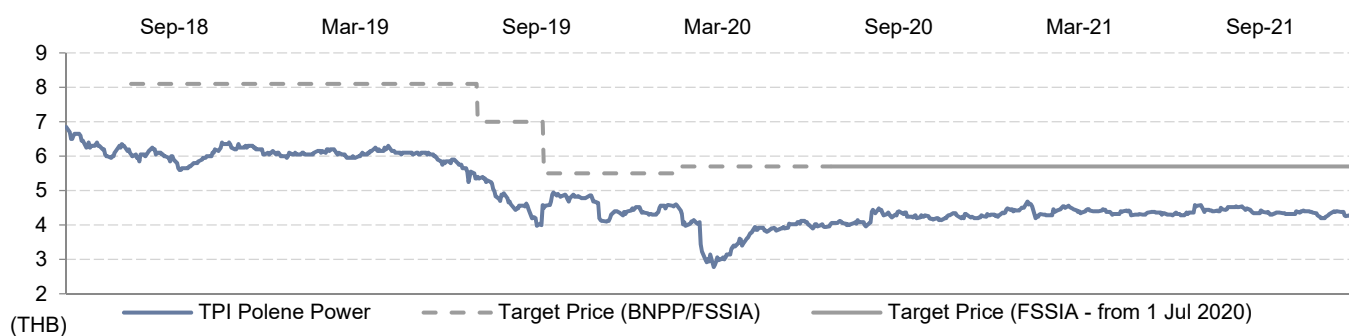
Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
15-Nov-2018	BUY	14.50	08-May-2020	BUY	15.00	05-May-2021	BUY	18.00
20-Feb-2020	BUY	15.00	19-Feb-2021	BUY	15.00	31-Aug-2021	BUY	14.00

Suwat Sinsadok started covering this stock from 15-Nov-2018

Price and TP are in local currency

Source: FSSIA estimates

TPI Polene Power (TPIPP TB)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
15-Nov-2018	BUY	8.10	31-Oct-2019	BUY	5.50	-	-	-
05-Sep-2019	BUY	7.00	18-Feb-2020	BUY	5.70	-	-	-

Suwat Sinsadok started covering this stock from 15-Nov-2018

Price and TP are in local currency

Source: FSSIA estimates

Company	Ticker	Price	Rating	Valuation & Risks
Absolute Clean Energy	ACE TB	THB 3.86	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand, 2) a lower crude price, and 3) higher costs of biomass feedstock.
TPC Power Holding	TPCH TB	THB 11.50	BUY	The downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand, 2) a lower crude price, and 3) higher costs of biomass feedstock.
TPI Polene Power	TPIPP TB	THB 4.22	BUY	Downside risks to our SoTP-based TP include 1) lower-than-expected demand for electricity in Thailand; 2) lower crude price, and 3) unplanned shutdown of the company's power plants.

Source: FSSIA estimates

Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited

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All share prices are as at market close on 20-Sep-2021 unless otherwise stated.

RECOMMENDATION STRUCTURE

Stock ratings

Stock ratings are based on absolute upside or downside, which we define as $(\text{target price}^* - \text{current price}) / \text{current price}$.

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on market price and the formal recommendation.

* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

Industry Recommendations

Overweight. The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

Neutral. The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

Underweight. The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

Country (Strategy) Recommendations

Overweight (O). Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Neutral (N). Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

Underweight (U). Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.