FSU Regional Fiscal Templates Library for GeoX*

Russian Federation 2015 Fiscal Template

GeoX 6.1 implementation

18 February 2015

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1. Executive Summary

The present Russian Federation Royalty Tax 2015 fiscal template model has several production, property, project fee and income tax elements. The production elements – export duties and mineral extraction taxes – are calculated separately for crude oil, non-associated gas and condensate.

The fiscal template model is initially set up with the Point&Click functionality of gFullCycle with extensive modifications made with the fiscal programming language tool.

The fiscal template is capable of taking in account all federal-level petroleum tax specifics (basis, allowances, tax holidays and special cases of HC projects taxation provided for in the applicable Tax Code as of 1 Jan 2015). The user is required to define fiscal parameters applicable to his particular context by entering relevant values in SetUserParameters() function of the fiscal model. While default values included in the template apply to many currently producing Russian fields, many hot frontier exploration opportunities both onshore and offshore do qualify for tangible allowances.

In addition to federal-level allowances, holidays and special cases, each Russian administrative region is allowed to set reduced rates and terms for two tax elements – property tax and profit tax. The fiscal template model allows setting specific regional rates for these taxes.

The template model calculations are broken down in Working Interest (WI) and Other Interest (OI) level.

In addition to code, the present template includes a customized report providing full details of taxes calculations for WI level found in both main Notebook screen (under Results -> Working Interest -> Government take -> Details) and in Trial Browser.

The deliverables package for this template includes:

- (1) GeoX 6.1 export file with the fiscal template (FC Russia-RT-2015 WI-OI fiscal template 6.1.0.1149.gx)
- (2) Fiscal template documentation (GeoX Russian Federation Royalty Tax 2015 Documentation.pdf)
- (3) A zip archive (*GeoX Russia-RT-2015 verification cases v17022015.zipx*) containing:
 a GeoX 6.1 export file with six fiscal verification cases
 (*FC Russia-RT-2015 WI-OI verification cases 6.1.0.1149.gx*)
 same six verification cases as cash flow models in Excel
 (*Russia 2015 fiscal verification spreadsheet All HC v.6.1.0 (general fisc para) v170215.xlsx* and 5 similarly named .xlsx files)

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5. Detailed Description of Fiscal Elements

5.1. Export Duty

5.1.1. On Crude Oil

Three tiers of export duty rates are applicable:

- General Rate
- Special Rate for Named Fields
- Special Rate for Viscous Crudes

The Russian government has an authority to set the rates on a monthly basis which cannot exceed the maximum rates specified below. In line with current practices, it is assumed that actual rates set by the government match the maximum rates permitted under the law.

The maximum General Rate of export duty on crude oil is defined by the following formula:

Export Duty (in \$/t) = 0 if Urals < \$109.5 / t= (Urals-109.5) * 35% if \$109.5 / t < Urals < \$146/t= (Urals-146) * 45% + 12.78 if \$146 / t < Urals < \$182.5 / t= (Urals-182.5) * <u>HighBracketRate</u>+29.2 if Urals > \$182.5 / t

where **HighBracketRate** = 42% in 2015, 36% in 2016 and 30% thereafter.

Urals is understood as an average of Platt's/Argus crude oil quotations for Urals Blend basis CIF Mediterranean/ CIF Northwest Europe. There are 7.3 bbls of Urals in one tonne of Urals, therefore the higher bracket of export duty rate start to apply from an international oil price level of \$25/bbl.

Maximum Special Rate for Named Fields is defined by the following formula:

Export Duty (in \$/t) = (Urals – 182.5) * HighBracketRate - 56.57 – Urals * 0.14 but not less than 0.

The Russian government maintains a list of fields for which a Special Rate for Named Fields applies as well as the maximum field output subject to such rates. A declared criterion for entering this list is a forecasted lifetime IRR below 16.3% provided that the field is located onshore in Sakha (Yakutia), Irkutsk region, Krasnoyarsk kray, Nenets district, Yamal district north of 65 deg.lat, or targets primarily Tyumen formation, or is located offshore. However, the procedure is far from automatic and requires approvals of several Russian ministries as well as the governments of other countries – members of the Customs Union. By way of example, the list was extended with just one field in the 20 months from April 2013 to Dec 2014.

list includes 24 fields as follows:					
Field Name	Туре	Location			
Yurubcheno-Tokhomskoye	o/g/c	East Siberia			
Talakanskoye (Eastern area)	o/g/c	East Siberia			
Alinskoye	g/o	East Siberia			
Srednebotuobinskoye	o/g/c	East Siberia			
Dulisminskoye	o/g/c	East Siberia			
Kuyumbinskoye	o/g/c	East Siberia			
North Talakanskoye	0	East Siberia			
East Alinskoye	0	East Siberia			
Verkhne-Pileduyskoye	g/c	East Siberia			
Pilyudinskoye	0	East Siberia			
Stanakhskoye	o/g	East Siberia			
Yaraktinskoye	o/g/c	East Siberia			
Danilovskoye	g/o	East Siberia			
Markovskoye	o/g/c	East Siberia			
West Ayanskoye	o/g/c	East Siberia			
Tagulskoye	o/g/c	East Siberia			
Suzunskoye	o/g/c	East Siberia			
South Talakanskoye	o/g/c	East Siberia			
Chayandinskoye	o/g/c	East Siberia			
Vakunayskoye	o/g/c	East Siberia			
Im.Yu.Korchagina	o/g/c	North			
		Caspian			
Im.V.Filanovskogo	o/g/c	North			
		Caspian			
Prirazlomnoye	o/g	Arctic			
		Offshore			
Zapadno-Khosedayuskoye	0	Timan-			
		Pechora			

Currently the list includes 24 fields as follows:

Notwithstanding the above, presence of a field in the list doesn't guarantee that the Special Export Duty is applicable to its output since the Russian government has a discretion of setting maximum export volumes subject to such rate, which may be as low as nil.

Maximum Special Rate for Viscous Crudes is defined by the following formula:

Export Duty (in \$/tonne) = [(Urals-182.5)*ViscBracketRate+29.2] * 0.1 but not less than 0

where ViscBracketRate = 57% in 2015 and 55% from 2016 onwards

The Special Rate for Viscous Crudes applies for crude oil fields with formation viscosity > 10000 mPa*s until 1 Jan 2023.

A parameter in GeoX.SetUserParameters() function defines if the user wishes to model cash flows with General Rate, Special Rate for Named Fields or Special Rate for Viscous Crudes. A forth option is not to calculate export duty at all – this provides a flexibility of defining domestic crude oil price in Economic Scenarios if desired.

5.1.2. On Condensate

The maximum export duty rate equals to General Rate for Crude Oil in US\$ per tonne. It is added as a separate tax item in GeoX because crude oil and condensate have different densities at the wellhead therefore different rates expressed in volumetric units (\$ per barrel or per cubic meter).

Actual export duty rates set by the Russian government are generally equal to the maximum rates.

Zero rate of export duty currently applies to the following named fields developed by Novatek.

Field Name	Туре	Location
Yuzhno-Tambeyskoye	o/g/c	Yamal
Salmanovskoye (Utrenneye)	o/g/c	Yamal
Geofizicheskoye	o/g/c	Yamal

Amendments to the zero-rate list requires approvals of several Russian ministries as well as the governments of other countries – members of the Customs Union.

A parameter in GeoX.SetUserParameters() defines if the user wishes to model cash flows with full or zero rate of export duty on condensate. In addition to modeling the above mentioned named fields allowance using this zero-rate option provides a flexibility of defining domestic condensate price in Economic Scenarios if desired.

5.1.3. On Natural Gas

The rate of the export duty is 30% of the customs value of natural gas exported by pipelines valued at the Russian border.

The export duty does not apply for LNG exports.

Note that this tax is not explicitly modelled in the present template since Gas Price in Economic Scenario is interpreted as net of any sales taxes (see section HC Prices and Price Adjustments Coefficients).

5.1.4. Export Duty Holidays for Offshore Fields

Offshore fields enjoy a long export duty holiday as specified in the following table. This applies to all HC streams.

Offshore Field Location	Term of Export Duty Holiday
New fields in Azov Sea, Baltic Sea, Black	Until 31.03.2032
Sea (WD <=100 m), Pechora Sea, White	
Sea, Sea of Okhotsk (south of 55 deg.lat),	
Caspian sea	
New Fields in Black Sea (WD > 100 m),	Until 31.03.2042
Sea of Okhotsk (north of 55 deg.lat),	
Barents Sea, Kara Sea, Laptev Sea, East-	
Siberian Sea, Chukchi Sea and Bering Sea	
Existing Fields in Sea of Okhotsk (south of	Until 01.01.2021
55 deg. lat)	

5.2. Mineral Extraction Tax

Russia uses two tiers of MET rates:

- (1) **General MET rates** which are calculated on the basis of produced volume. These rules are described in sections 5.2.1 to 5.2.3
- (2) **MET rates for New Offshore Fields** which are calculated on the revenue basis. After expiry of the specified term, the MET rates revert to general rates without application of MET holidays. These rules are described in section 5.2.4.

5.2.1. On Crude Oil

With effect from 1 Jan 2015 the tax is calculated by the following formula:

MET (in RUB/tonne) = BaseRate * Coef_Price – FieldSpecificAdjustment

FieldSpecificAdjustment = LegacyBaseRate * Coef_Price * (1 – Coef_Depletion * Coef_FieldSize * Coef_TightOil * Coef_TightOilDepletion * Coef_LocationQ)

where

BaseRate = 766 RUB/tonne for 2015, 857 RUB/tonne for 2016 and 919 RUB/tonne thereafter

LegacyBaseRate = 530 RUB/tonne for 2015 and 559 RUB/tonne thereafter

Coef_Price = (Urals – 15) * ROE / 261 where Urals (in \$/bbl) is average of Platt's/Argus quotation for Urals Blend CIF Med/ CIF NWE. ROE is average RUR/USD rate of exchange

Coef_Depletion = (3.8 - 3.5 * N / V), but not more than 1 and not less than 0.3

where N is cumulative crude oil production from the license area as of the beginning of the tax year

and V is expected ultimate recovery (initial recoverable reserves)

Coef_FieldSize = 1 *if* N₀/V > 5% = 1 *if* V > 5 *million tonnes* = 0.125 * V + 0.375

where V (in million tonnes) is expected ultimate recovery (initial recoverable reservesas of 1 Jan 2012 or as of the license start year as the case may be and N_0 is cumulative crude oil production as of 1 Jan 2012 or as of the license start year as the case may be

Coef_TightOil aims to reduce MET for tight oil fields. It equals
= 0.2 if the target's permeability is below 2 mD and net pay is <= 10 m
=0.4 if the target's permeability is below 2 mD and net pay is >10 m
=0.8 if the target belongs to Tyumen formation
= 1.0 otherwise

Reduced Coef_TightOil applies for first 15 years since start of production changing to 1.0 thereafter.

Coef_TightOilDepletion allows differentiating MET rates between conventional oil and tight oil segments located on the same license block.

This implies that conventional and tight oil segments are considered as ring-fenced for Crude Oil MET tax application purposes.

In practical terms, this effect can be achieved by defining full cycle analyses in GeoX separately for conventional oil projects and tight oil projects even if they are located on the same license block.

The calculation logic is as follows: If Coef_TightOil = 1 then Coef_TightOilDepletion = 1 Otherwise Coef_TightOilDepletion = Coef_Depletion Coef_Depletion=1

Coef_LocationQ is equal to

= generally, 1 or

- = 0 for below described specific cases :
- Fields with crude oil viscosity between 200 and 10,000 mPa*sec at formation conditions

- fields in Sakha (Yakutia), Irkutsk region and Kransnoyarsk kray until cumulative production reaches 25 mm t but not longer than till 31.12.2016/ 31.12.2021 or 10/15 years since license issuance (as the case may be^{**})
- offshore fields north of Northern polar circle until cumulative production reaches 35 mmt but not longer than till 31.12.2018/31.12.2021 or 10/15 years since license issuance (as the case may be^{**})
- offshore fields in Azov and Caspian sea until cumulative production of 10 mmt but not longer than till 31.12.2015 or 7/12 years since license issuance (as the case may be^{**})
- fields at Nenets autonomous region and at Yamal peninsula until cumulative production of 15 mmt but not longer than till 31.12.2015 / 31.12.2021 or 7/12 years since license issuance (as the case may be^{**})
- fields in the Black sea until cumulative production of 20 mmt but not longer than till 31.12.2021 or 10/15 years since license issuance (as the case may be^{**})
- fields in the Sea of Okhotsk until cumulative production of 30 mmt but not longer than 31.12.2021 or 10/15 years since license issuance (as the case may be^{**})
- fields north of 65 deg.latitude in Yamal-Nenets autonomous region but excluding Yamal peninsula until cumulative production of 25 mmt but not longer than till 31.12.2021 or 10/15 years since license issuance (as the case may be^{**})

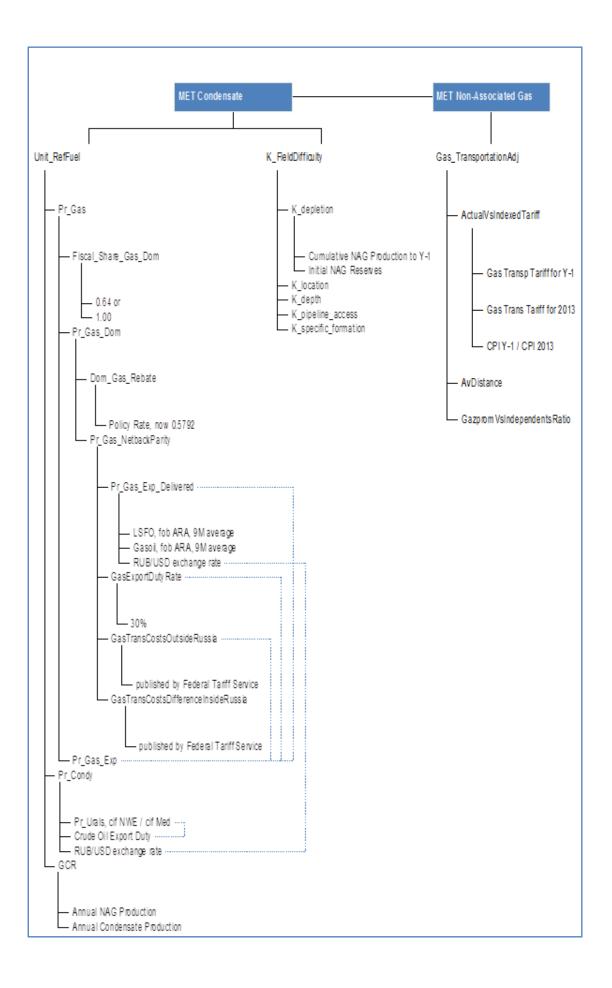
Notwithstanding the above, MET rate is equal to 0 for:

- crude oil production from fields with formation viscosity above 10,000 mPa x sec.
- crude oil production from Bazhenov, Abalak, Khadum and Domanic formations for 15 years counted from start of production.

5.2.2. On Non-Associated Gas and Condensate

Formerly a flat rate, by 2014 this tax has evolved to a rather complex set of formulas described in the below scheme and table:

^{**} Shorter duration applies for P (production-only) license while longer duration applies for E&P (combined exploration and production) license



Russian Mineral Extraction Tax for Gas and Condensate (other than for New Offshore Fields)

Parameter Description	Parameter Abbreviation	Formula	Unit of Measurement	
Mineral Extraction Tax on Non-		= 35 * Unit_RefFuel * K_FieldDifficulty + GasTransportation_Adj	RUB / kcm	
Associated Gas Mineral Extraction Tax on Condensate		but not less than 0 = 42 * Unit_RefFuel * K_FieldDifficulty * CondensateMETUplift	RUB/ tonne	
			NOD/ toline	
Base Value of Unit of Reference Fuel	Unit_RefFuel	=0.15*(Pr_Gas*GCR+Pr_Condy*(1-GCR))/((1-GCR)*42+GCR*35)	RUB/gigajoule	
Average Weighted Calculated Gas Price	Pr_Gas	= Pr_Gas_Dom * Fiscal_Share_Gas_Dom + Pr_Gas_Exp * (1-Fiscal_Share_Gas_Dom)	RUB / kcm	
Gas-Condensate Ratio for given year	GCR	= 35 * GasProduction / (35 * GasProduction + 42*CondensateProduction)	fraction	
on a reference fuel basis		GasProduction is Non-Associated Gas Production in kcm, CondensateProduction is in tonnes. For example, a field producing 0.2 t of condensate per 1 kcm of NAG will have a GCR of 35*1/(35*1+42*0.2) = 0.81		
Calculated Price for Condensate	Pr_Condy	= (Pr_Urals * 8 - DeemedCondensateExportDuty) * ROE	RUB/tonne	
Urals Price Deemed Condensate Export Duty	PrUrals Deemed Condensate Export Duty	International price for Urals Blend, average CIF NWE and CIF Med calculated according to 2014 general Crude Oil export duty rate formula:	USD / bbl USD/tonne	
Rate	DeenleucondensateLxportDuty	=0, if Urals < 109.5 \$/t = (Urals - 109.5) * 0.35 if Urals < 146 \$/t = 12.78 + (Urals - 146) * 0.45 if Urals < 182.5 \$/t = 29.2 + (Urals - 182.5) * 0.59 if Urals >= 182.5 \$/t		
Rouble / USD rate of exchange	ROE		RUB/USD	
for Delivery to Domestic Customers	Pr_Gas_Dom	= Pr_Gas_NetBackParity * Dom_Gas_Rebate	RUB / kcm	
Fiscal Share of Gas Deliveries for Domestic Market	Fiscal_Share_Gas_Dom	 = 0.64 for Gazprom-controlled companies = 0.64 for predominantly liquid HC producers [see Note 3] = 1.00 for independent gas producers 	fraction	
Calculated Price for Gas Sales Outside Russia basis FIP Russia border, net of export duty	Pr_Gas_Exp	= Pr_Gas_Exp_Delivered * (100% - GasExportDutyRate)/100% - - GasTransportCostsOutsideRussia	RUB / kcm	
Theoretic Domestic Gas Price which would ensure netback parity for domestic and export sales	Pr_Gas_NetBackParity	= Pr_Gas_Exp_Delivered * (100% - GasExportDutyRate)/100% - - GasTransportCostsOutsideRussia - GasTranspCostsDifferenceInsideRussia	RUB / kcm	
Regulated Rebate for Domestic Sales	Dom_Gas_Rebate	State regulation policy rate Published by RF Federal Tariffs Service on a monthly basis. The aim is to ensure a gradual convergence between export and domestic netbacks within a few years. This price convergence target has been pushed back a few times, from 2011 to 2015 and later to 2017-18. Most recently the convergence target was discussed as 2025-27 or never. For July 2014 Rebate = 0.5792	fraction	
Calculated Price for Gas Sales Outside	Pr_Gas_Exp_Delivered	= (0.2097 * LSFO + 0.2685 * Gasoil) * ROE	RUB / kcm	
Russia on a Delivered Basis		LSFO = Low Sulphur (1%) Fuel Oil, basis BARGES FOB ARA, USD / mt, 9 month average Gasoil = Gasoil 0.1%S, basis BARGES FOB ARA, USD/mt, 9 month average ROE = RUB / USD rate of exchange The figure is published by RF Federal Tariffs Service on a monthly basis.		
Average Weighted Gas Transportation and Storage Costs beyond the Russian territory	Gas Transport Costs Outside Russia	A rouble equivalent of 44.00 USD/kcm	RUB / kcm	
Average Weighted Difference	GasTranspCostsDifferenceInsideRussia	The figure is published by RF Federal Tariffs Service and reviewed on an annual	RUB / kcm	
between Gas Transportation costs inside Russia incurred for Export and Domestic Sales		basis. As of Jan 2015 the value is 468.7 RUB/kcm.		
Export Duty Rate for Natural Gas exported by Pipelines	GasExportDutyRate	30%		
Coefficient reflecting relative technical difficulties for the field development	K_FieldDifficulty	= MIN (K_depletion, K_location, K_depth, K_pipeline_access, K_specific_formation)	fraction	
Coefficient reducing tax burden for depleted fields	K_depletion	=1.0 if Depletion is <=0.7 =2.75-2.5*Depletion if Depletion is >0.7 and <=0.9 =0.5 if Depletion is > 0.9 where Depletion = Cumulative NAG Production / Initial NAG Reserves	fraction	
Coefficient reducing tax burden for remote fields	K_location	* if the field is located in Yamal or Gydan peninsula, K_location = 0.066 * Y + 0.144 for first 12 years since the start of gas production [see Note1] where Y is the relative year from production start, starting with 1 * if the field is located in Astrakhan region, K_location = 0.73 * if the field is located at Irkutsk region, Krasnoyarsk Kray, Russian Far East or Sea of Okhotsk K_location = 0.1 until 2033 inclusive, thereafter 1.0 * if the field is located at Irkutsk region or Sakha(Yakutia) and first HC production occurs after 1.1.2018 and the operator is a Gazprom-controlled company or predominantly liquid producer, K_location = 0 until 15th year of NAG production (inclusive); K_location = 0.1 * (n-15) for n = 16th to 24th year of NAG production (inclusive); K_location = 1.0	fraction	

Parameter Description	Parameter Abbreviation	Formula	Unit of Measurement
Coefficient reducing tax burden for	K_depth	= 1.0 if Depth of Crest is <= 1700 m	fraction
deep fields		= 0.64 if Depth of Crest is > 1700 m and <= 3300 m	
		= 0.5 if Depth of Crest is > 3300 m;	
		Notwithstanding the above, K_depth = 1.0 for fields located in Yamal or Gydan	
		peninsula, Astrakhan region, Irkutsk region, Krasnoyarsk Kray, Russian Far East or	
		Sea of Okhotsk	
Coefficient reducing tax burden for	K_pipeline_access	= 0.1 if the field is only connected to local pipeline system	fraction
field without trunk pipeline access		= 1.0 if the field is connected to Russian Unified Gas Pipeline Network	
Coefficient reducing tax burden for	K_specific_formation	* if the field produces from Turonian formation, K_specific_formation = 0.053 * Y +	fraction
Turonian formation developments		0.157 for first 15 years since start of production [see Note1] where Y is the relative	
		year from production start, starting with 1	
		* otherwise, K_specific_formation = 1.0	
		see Note2	
Adjustment for gas transportation	GasTransportation_Adj	= 0 until 1 Jan 2015	RUB/kcm
costs		= 0 if the field is not connected to Russian Unified Gas Pipeline Network	
		= 0.5 * ActualVsIndexedTariff * AvDistance/100 * 1 /	
		GazpromVsIndependentsRatio, but not less than 0	
		We understand the current Russian policy is to index natural monopolies tariffs at	
		rates below general inflation, so this adjustment may be assumed at 0 for long-	
		term fiscal modelling	
		NB: with the current wording, gas tariffs growing faster than general inflation will	
		increase MET rate. We think the legislature intention was the opposite - to reduce	
		tax if transportation costs grow faster than expected.	
Difference between Actual Average	ActualVsIndexedTariff	A Difference between Actual Average Gas Transportation Tariff for Y-1 and	RUB/kcm
Gas Transportation Tariff for Y-1 and		Average Gas Tariff in 2013 adjusted for CPI deflator to Y-1.	
Average Gas Transportation Tariff in		It is unclear if it refers to gas transportation tariff for domestic sales or export or	
2013 adjusted for CPI deflator to Y-1		both.	
		The figure is published by Federal Tariff Service starting from Jan 2015.	
Average Distance of Gas Pipeline	AvDistance	= 2000 km or as published by Federal Tariff Service	kilometers
Transportation in Russia			
Ratio of annual gas volume produced	GazpromVsIndependentsRatio	= 4 or as published by Federal Tariff Service	ratio
by Gazprom controlled entities to gas			
produced by other producers			
Uplift for Condensate MET	CondensateMETUplift	= 4.4 in 2015	ratio
		= 5.5 in 2016	
		= 6.5 in 2017 and beyond	
		The uplift was introduced as a part of 'tax maneuvre' starting from 2015	

<u>N o t e s :</u> Note1: Start of gas production is defined as the year in which NAG depletion exceeds 1% Note2: Turonian formation may be classified as tight gas. As of today, the only Turonian development case in Russia is Yuzhno-Russkoye field developed by a Gazprom-Wintershall JV Note 3: "Predominantly liquid HC produ" Predominantly liquid HC producer" is defined as the one with NAG share in total HC production below 35%. NAG_Share = 35 * Total NAG Production / (35 * (Total NAG Production + Total AG Production) + 42 * (Total Crude Oil Production + Total Condensate Production))

where "Total" means total production at the taxpayer entity level $% \mathcal{T}_{\mathcal{T}}$

MET holiday with zero tax rate is applicable for initial production from fields planned to supply YamalLNG project:

• fields located at Yamal and Gydan peninsula with gas production used exclusively for LNG production, will have zero rate of MET on NAG until cumulative gas production of 250 bcm and zero rate of MET on Condensate until cumulative condensate production of 20 mmt but not longer than for 12 years from the start of production

The user has to define condensate density and Rouble/US Dollar exchange rate in GeoX.SetUserParameters() function.

5.2.3. On Associated Gas

MET is not charged on Associated Gas

5.2.4. MET for New Offshore Fields

With effect from 1 Jan 2014 New Offshore Fields enjoy a completely different system of MET rates compared to general MET rates.

These rules are summarized in the following table:

		Ad Valeur Rate, per cent		
Field Location	Term from Start of Production	Oil & Condensate	Non Associated Gas	Associated Gas
Azov Sea, Baltic Sea	5 years but not later than 31.03.2022	30	30	0
Black Sea (WD <=100 m), Pechora Sea, White Sea, Japanese Sea, Sea of Okhotsk south of 55 deg.lat, Caspian Sea	7 years but not later than 31.03.2032	15	15	0
Black Sea (WD > 100 m), Sea of Okhotsk north of 55 deg.lat, Barents Sea south of 72 deg.lat	10 years but no later than 31.03.2037	10	1.3	0
Kara Sea, Barents Sea north of 72 deg.lat, Laptev Sea, East-Siberian Sea, Chukchi Sea and Bering Sea	15 years but no later than 31.03.2042	5 (*)	1	0

Russian Mineral Extraction Tax for New Offshore Fields

(*) reduced to 4.5 if the licenseholder is not allowed to export LNG

After expiration of Term the rates revert to general MET rates without application of MET holidays

The Value of each HC stream is understood as its Netback price less Export Duty if any.

Start of Production Year is understood at the year in which any of Crude Oil, Condensate or Non-Associated Gas depletion rate exceeds 1%.

After expiration of the term such fields shall be taxed at general MET rates without applying MET holidays.

5.3. Auction Bid / License Signature Bonus

Subsoil licenses in Russia are normally awarded to highest bidders at subsoil use auctions and tenders organized by the state. The bids are made for the amount of initial signature bonus paid to the state

Since co-venturers may agree a specific payment ratio for covering initial signature bonus without regard to WI/OI interest shares, the user is to define both WI License Signature Bonus and OI License Signature Bonus in GeoX.SetUserParameters() function.

5.4. Property Tax

The tax is levied on depreciated value of fixed assets at a maximum rate of **2.2%**. Russian administrative regions may reduce the tax rate or set it to nil.

Offshore fields enjoy zero rate.

As the tax can only be levied on fully commissioned assets accepted by state bodies and recorded on the company's completed fixed assets register, tax payers do not rush to commission their assets prior to the start of production. Therefore for all practical purposes it may be assumed that the tax is only payable from the start of production.

5.5. Profit Tax

The general rate of tax is 20%. Russian administrative regions may reduce the tax rate down to a minimum of 15.5%. As offshore fields fall under federal regulation, relevant rate will normally be equal to 20%.

Export duties, MET, property tax and OPEX are expensed.

License signature bonus is depreciated over 2 years or the life of field at the taxpayers discretion.

Pre-exploration and exploration CAPEX is expensed.

Post-exploration CAPEX is depreciated linearly over specified useful life. Depreciable assets are allocated to depreciation groups (there are 10 groups) in accordance with their useful lives, which are determined partly by statute and partly by the taxpayer.

New Offshore projects can apply accelerated depreciation at up to 3 times the normal rate.

In GeoX implementation all fixed assets are split in four categories - well drilling, well completions (for Appraisal activity only), other CAPEX and Repeated Investments. The default useful lives are 7 years for well drilling, 5 years for well completions, 10 years for other CAPEX and for Repeated Investments, although the user may specify different values in GeoX.SetUserParameters() function.

Losses can be carried forward up to 10 years as a general rule. However, since there is no ring fence around onshore contract areas for profit tax purposes and Profit tax is calculated by aggregating all profits and losses of the taxpayer in Russia, the template model will only calculate loss carry-forward if the user specifically sets a relevant RingFenced parameter in GeoX.SetUserParameters(). Otherwise the losses on the analyzed project will be treated as tax credits on other Russian projects of the same taxpayer with obviously a positive effect on initial cash flow years.

In respect of new offshore fields losses can be carried forward indefinitely and there's a ring-fence around each offshore contract area.

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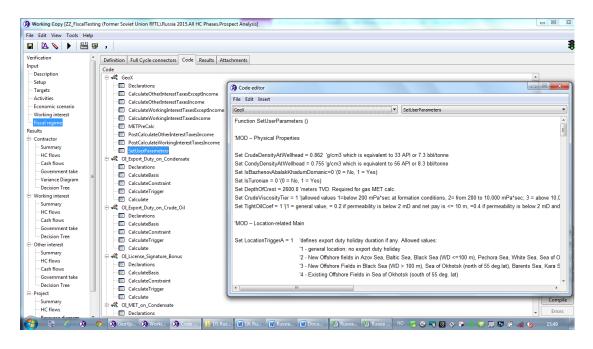
8. User Parameters

The template user is expected to verify and change the values of 39 variables to adjust the fiscal template to a fiscal context applicable to his asset.

These are grouped as follows:

- Physical properties: 7 variables
- Location-related: 9 variables
- Regional allowances and WI/OI entity specific: 9 variables
- Fixed assets useful service life: 5 variables
- Subsoil auction results: 2 variables
- Supplementary Economic Scenario profiles: 7 profile variables

The parameters are set in GeoX.SetUserParameters() function which is found under *Fiscal* regime \rightarrow Code \rightarrow GeoX \rightarrow SetUserParameters of a FullCycle analysis as illustrated below.



The required parameters and their default values are listed in the below table:

Name	Unit of Measurement	Default value	Comment
PHYSICAL PROPERTIES			
CrudeDensityAtWellhead	g/cm ³	0.862	equivalent to 33° API or 7.3 bbl/tonne
CondyDensityAtWellhead	g/cm ³	0.862	equivalent to 56° API or 8.3 bbl/tonne
IsBazhenovAbalakKhadumDomanic	logical (0=No, 1=Yes)	0	set to 1 if the target belongs to any of the four specified geological formations
IsTuronian	logical (0=No, 1=Yes)	0	set to 1 if the target belongs to the specified geological formation
DepthOfCrest	meters TVD	2600	depth of shallowest segment's crest

CrudeViscosityTier	choice	 Allowed values: 1=below 200 mPa*sec at formation conditions, 2= from 200 to 10,000 mPa*sec; 3 = above 10,000 mPa*sec.
TightOilCoef	fraction	 Allowed values: 1 = general value, = 0.2 if permeability is below 2 mD and net pay is <= 10 m, =0.4 if permeability is below 2 mD and net pay is >10 m, =0.8 if Tyumen formation
LOCATION RELATED		
LocationTriggerA	choice	 defines export duty holiday duration if any. Allowed values: general location; no export duty holiday New Offshore fields in Azov Sea, Baltic Sea, Black Sea (WD <=100 m), Pechora Sea, White Sea, Sea of Okhotsk (south of 55 deg.lat), Caspian sea New Offshore Fields in Black Sea (WD > 100 m) Sea of Okhotsk (north of 55 deg.lat), Barents Sea, Kara Sea, Laptev Sea, East-Siberian Sea, Chukchi Sea and Bering Sea Existing Offshore Fields in Sea of Okhotsk (south of 55 deg. lat)
LocationTriggerB	choice	 defines applicability of Ad Valeur rules for MET calculation. Allowed values: - general location - the field is a New Offshore Field as per Tax code, located at Azov Sea or Baltic Sea - the field is a New Offshore Field as per Tax code, located at Azov Sea or Baltic Sea - the field is a New Offshore Field as per Tax code, located at Black Sea (WD <=100 m), Pechora Sea, White Sea, Japanese Sea, Sea of Okhotsk south of 55 deg.lat, Caspian Sea - the field is a New Offshore Field as per Tax code, located at Black Sea (WD > 100 m), Sea of Okhotsk north of 55 deg.lat, Barents Sea south of 72 deg.lat - the field is a New Offshore Field as per Tax code, located at Kara Sea, Barents Sea north of 72 deg.lat - the field is a New Offshore Field as per Tax code, located at Kara Sea, Barents Sea north of 72 deg.lat, Laptev Sea, East-Siberian Sea, Chukchi Sea and Bering Sea and the operator is entitled to export LNG - the field is a New Offshore Field as per Tax code, located at Kara Sea, Barents Sea north of 72 deg.lat, Laptev Sea, East-Siberian Sea, Chukchi Sea and Bering Sea and the operator is NOT entitled to export LNG
LocationTriggerC	choice	 defines Coef Location for Crude Oil MET. Allowed values: general location the field is located in Sakha (Yakutia), Irkutsk region and Kransnoyarsk kray the field is an offshore field north of Northern polar circle the field is an offshore field in Azov and Caspian sea the field is located in Nenets autonomous region or Yamal peninsula the field is an offshore field in the Black sea the field is an offshore field in the Sea of Okhotsk the field is located north of 65 deg.latitude in Yamal-Nenets autonomous region but excluding Yamal peninsula

LocationTriggerD	choice	1	defines Coef Location for Gas/Condensate MET. Allowed values: 1 - general location 2 - located at Yamal or Gydan peninsula, 3 - located in Astrakhan region, 4 - located in Irkutsk region / Krasnoyarsk Kray / Russian Far East / Sea of Okhotsk; 5 - located in Irkutsk/Sakha region AND the operator is Gazprom-controlled or predominantly liquids producer and production starts after 1 Jan 2018
TypeCrudeOilExportDuty	choice	1	Allowed values: 1=General Rate, 2=Special Rate for Named Fields, 3 = Special Rate for Viscous Crudes or 4 = don't calculate Crude Oil Export Duty at all.
CondensateExportDutyCharged	logical (0=No, 1=Yes)	1	zero rate currently applies to 3 Yamal fields developed by Novatek
HasGasPipelineNetworkAccess	logical (0=No, 1=Yes)	1	Refers to current or planned access. Used to calculate gas MET
Is Yamal LNG METHoliday	logical (0=No, 1=Yes)	0	Yes means a field with exclusive gas supplies for YamalLNG project developed by Novatek
CoefLocationTerminalDate	absolute year + fraction of a year	2030.00 or 2027.00	Used when LocationTriggerC points to a field location other than general. The default value assumes a combined E&P license issued on 1.1.2015. Since actual license type and date may differ, the user may set the allowance terminal date as required. Note the format: =2027.25 will be interpreted as 1 Mar 2027; = 2027 as 1 Jan 2027, etc.
REGIONAL ALLOWANCES AND WI/OI EI	NTITY - SPECIFIC		
Fiscal_Share_Gas_Dom	fraction	1.0	Allowed values: =0.64 for Gazprom-controlled companies; =0.64 for predominantly liquid HC producers; =1.0 for Independent Gas Producers
ApplicablePropertyTaxRate	fraction	0.022	This is a regional tax. The rate may be set by regional authorities in the 02.2% range
WIApplicableProfitTaxRate	fraction	0.2	Profit tax rate as applicable to WI. This tax has a regional element. The rate may be set by regional authorities in the 15.520% range
OIApplicableProfitTaxRate	fraction	0.2	Profit tax rate as applicable to OI. This tax has a regional element. The rate may be set by regional authorities in the 15.520% range
WIRingFenced	logical (0=No, 1=Yes)	0	If ring fenced, WI losses will be carried forward for MaxLossCarryFwd years. If not ring fenced, losses on this project will reduce profit tax on other projects. Should be set to 1 for New Offshore Fields
OIRingFenced	logical (0=No, 1=Yes)	0	If ring fenced, OI losses will be carried forward for MaxLossCarryFwd years. If not ring fenced, losses on this project will reduce profit tax on other projects. Should be set to 1 for New Offshore Fields
WIOtherProjectsProfitTaxRate	fraction	0.2	Effective profit tax rate on WI's other Russian projects. May differ from own project profit tax rate due to regional differences. Used when WI is not Ring Fenced.
OlOtherProjectsProfitTaxRate	fraction	0.2	Effective profit tax rate on OI's other Russian projects. May differ from own project profit tax rate due to regional differences. Used when OI is not Ring Fenced.

MaxLossCarryFwd	years (integer)	10	maximum duration of Loss Carry Forward in years. Used if WI and/or OI are ring-fenced in which case
			it is either 10 years (general rule) or indefinite (for new offshore projects). For all practical purposes 20 years loss carry-forward would qualify as indefinite.
FIXED ASSETS USEFUL SERVICE LIFE			
ServiceLifeWellDrilling	years (integer)	7	years for linear depreciation; as accelerated depreciation applies for new offshore fields, reduce up to 3 times (integer)
ServiceLifeWellCompletions	years (integer)	5	years for linear depreciation; as accelerated depreciation applies for new offshore fields, reduce up to 3 times (integer)
ServiceLifeOtherCAPEX	years (integer)	10	years for linear depreciation; as accelerated depreciation applies for new offshore fields, reduce up to 3 times (integer)
ServiceLifeRepeatedInvestments	years (integer)	10	years for linear depreciation; as accelerated depreciation applies for new offshore fields, reduce up to 3 times (integer)
SignatureBonusAmortizationTime	years (integer)	2	Subsoil users have a discretion to amortize signature bonus over 2 years or life of license
SUBSOIL AUCTION RESULTS			
WISignatureBonus	million USD	0	
OlSignatureBonus	million USD	0	
SUPPLEMENTARY ECONOMIC SCENARIO PRO	FILES		
Urals_Fraction(A)	multiplier	0.98	A multiplier for Urals cif Med/NWE vs Oil Price in Economic Scenario on a volumetric basis. Each year may be assigned a different value. Default applies to all project years.
Pr_Gas_Exp_Delivered(A)	USD per KCM	331.55	Average European gas price on a delivered basis under long-term contracts. Each year may be assigned a different value. Default applies to all project years. The default corresponds to an actual value as of Jan 2015
RUB_USD_ROE(A)	RUB per USD	60	RUB/USD exchange rate.
			Each year may be assigned a different value. Default applies to all project years.
Gas Transport Costs Outside Russia (A)	USD per KCM	44.00	Default applies to all project years. Average Weighted Gas Transportation and Storage
Gas Transport Costs Outside Russia (A) Gas Transport Costs Difference Inside Russia (A)	USD per KCM RUB per KCM	44.00 468.7	Default applies to all project years. Average Weighted Gas Transportation and Storage Costs beyond the Russian territory. Average Weighted Difference between Gas Transportation costs inside Russia incurred for Export and Domestic Sales. Each year may be assigned a different value. Default applies to all
GasTransportCostsOutsideRussia(A) GasTransportCostsDifferenceInsideRussia(A) Dom_Gas_Rebate(A)	-		Default applies to all project years. Average Weighted Gas Transportation and Storage Costs beyond the Russian territory. Average Weighted Difference between Gas Transportation costs inside Russia incurred for Export and Domestic Sales. Each year may be

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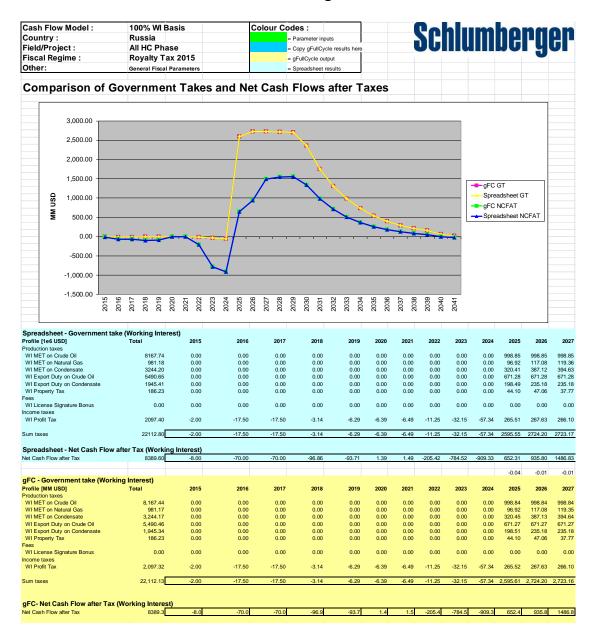
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Appendix 2 - Verification of GeoX Fiscal Model

The results for the GeoX fiscal template model have been verified vis-à-vis six spreadsheet models based on standard GeoX cases (the spreadsheets are included in the fiscal regime package). The results are for deterministic runs of the gFullCycle model and for the project/100% WI, and are shown in the following sets of tables/figures. Description of the five standard GeoX cases is provided as Appendix 3. The non-standard sixth case is described in the relevant section of this Appendix 2.

The screenshots of verification runs are provided below while full Excel models are attached to this fiscal template package.

The conclusion is that the gFC fiscal template model and the spreadsheet models are identical.



Verification of standard Case 5. Combined Large Oil and Gas Case

Verification of non-standard Case.

This non-standard case was added to fully verify tax exemptions and allowances functionality of the fiscal template. It is technically Case 5 'Combined Large Oil & Gas case' with following changes from default values:

Changes in GeoX.SetUserParameters:

Name	Unit of Measurement	Used value	Comment
PHYSICAL PROPERTIES	medsurement	Value	
TightOilCoef	fraction	0.4	=0.4 if permeability is below 2 mD and net pay is >10 m
LOCATION RELATED			
LocationTriggerA	choice	4	4 - Existing Offshore Fields in Sea of Okhotsk (south of 55 deg. lat)
LocationTriggerB	choice	3	3 - the field is a New Offshore Field as per Tax code, located at Black Sea (WD <=100 m), Pechora Sea, White Sea, Japanese Sea, Sea of Okhotsk south of 55 deg.lat, Caspian Sea
LocationTriggerC	choice	7	7 - the field is an offshore field in the Sea of Okhotsk
LocationTriggerD	choice	4	4 - located in Irkutsk region / Krasnoyarsk Kray / Russian Far East / Sea of Okhotsk;
TypeCrudeOilExportDuty	choice	2	2=Special Rate for Named Fields,
HasGasPipelineNetworkAccess	logical (0=No, 1=Yes)	0	No current or planned access (offshore gas field)
REGIONAL ALLOWANCES AND WI/OI ENTIT	TY - SPECIFIC		
Fiscal_Share_Gas_Dom	fraction	0.64	=0.64 for predominantly liquid HC producers;
WIRingFenced	logical (0=No, 1=Yes)	1	WI losses will be carried forward for MaxLossCarryFwd years.
MaxLossCarryFwd	years (integer)	20	For all practical purposes 20 years loss carry- forward would qualify as indefinite.
FIXED ASSETS USEFUL SERVICE LIFE			
ServiceLifeWellDrilling	years (integer)	3	accelerated depreciation applies for new offshore fields
ServiceLifeWellCompletions	years (integer)	2	accelerated depreciation applies for new offshore fields
ServiceLifeOtherCAPEX	years (integer)	3	accelerated depreciation applies for new offshore fields
ServiceLifeRepeatedInvestments	years (integer)	3	accelerated depreciation applies for new offshore fields
SUPPLEMENTARY ECONOMIC SCENARIO P	ROFILES		
RUB_USD_ROE(A)	RUB per USD	60 in 2015 +2% pa thereafter	

