

Ministry of Finance  
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## Environment-related investment mandates in the Government Pension Fund Global

Section 2-4 of the management mandate for the Government Pension Fund Global (GPF) requires Norges Bank to establish environment-related investment mandates within the general limits for the fund's management set out in section 3-5 of the mandate. At present, the market value of these mandates shall normally be in the range of 20 and 30 billion kroner.

In its letter of 24 June 2014, the Ministry announced that it wishes to increase the interval for environment-related investment mandates such that they normally amount to between 30 and 50 billion kroner, cf. Report to the Storting No. 19 (2013-2014) and the Storting's consideration thereof, cf. Recommendation No. 200 S (2013-2014). The Ministry also wrote in its letter that it wishes to explore the possibilities for stepping up the fund's investments in renewable energy within the existing programme for environment-related investment mandates.<sup>1</sup> The Bank was asked to assess a number of matters in this context, and our assessments are set out in this letter. The enclosure provides additional data and background information and presents the indices referred to in the letter.

### Effect on expected return, risk and ownership share

The Ministry asked the Bank to assess the effects on expected return, risk and ownership share of a further increase and possible concentration of the environment-related mandates

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<sup>1</sup> The environment-related investment mandates currently cover investments in listed equities and so-called "green" bonds. Green bonds are bonds where the capital raised is earmarked in some way for climate-friendly projects. To ensure that the capital raised is used for this purpose, investors often require independent assurance.



on the renewable energy sector. Renewable energy is currently one of several sectors these mandates can be invested in.

#### *Effect on expected return*

The requirement to establish environment-related investment mandates means that the Ministry is restricting the Bank's use of the freedom it has been given in the execution of its management of the GPFG. Concentration of these mandates on the renewable energy sector would impose even greater restrictions. We share the view of Ang et al. (2014)<sup>2</sup> that restrictions of this kind may not be associated with long-run excess returns.

The environment-related mandates are currently concentrated in parts of the stock market that are well-suited for active management. The expected excess return from our stock selection will nevertheless be small in comparison to the potential effect on returns of increased investment in environment-related companies. This is a return risk that the Bank is mandated to accept in its management.

#### *Effect on risk*

The return on stocks covered by the environment-related mandates has fluctuated more than, and differently to, the return on the fund's wider equity portfolio.<sup>3</sup> Although the sector is more mature now than it was in 2009 when the mandates were first established, technology risk and the risk of changes in the regulatory framework (direct subsidies, tax incentives, regulations etc.) could result in major variations in future returns. These investments must therefore be expected to increase the fund's market risk. This applies particularly if the mandates are concentrated on the renewable energy sector, which has been especially volatile in recent years.

Environment-related investment mandates currently draw on the Bank's limit for relative volatility (tracking error) because the Bank is obliged to invest in a way that deviates from the strategic benchmark index. Norges Bank's calculations show that an allocation of 50 billion kroner to environment-related mandates could lay claim to around 10 basis points of the Bank's limit for relative volatility.<sup>4</sup> In periods with large swings in share prices, the figure could be even higher. If the allocation of 50 billion kroner is concentrated in the renewable energy sector, it could lay claim to around 20 basis points of the limit. In these estimates of relative risk, we have used two indices that attempt to capture "pure-play" environmental companies.<sup>5</sup> The effect on relative volatility is because prices for stocks included in these

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<sup>2</sup> Ang A., M.W. Brandt and D.F. Denison (2014), *Review of the Active Management of the Norwegian Government Pension Fund Global*, report to the Ministry of Finance, page 98: "Implementing this mandate requires taking deviations from the benchmark, since the benchmark's weights are not computed with this consideration in mind. This is a mandated move away from market weights, but it may not be associated with long-run excess returns."

<sup>3</sup> See Norges Bank's letter to the Ministry of 12 March 2014 on our experience with environment-related mandates.

<sup>4</sup> The estimate of 10 basis points is based on the size of the fund in Norwegian kroner at the end of June 2014 and on historical index constituents. The calculations are based on market conditions over the past 10 years.

<sup>5</sup> As in our letter of 12 March 2014, we have used the FTSE ET 50 environmental index as a basis for the calculation of the risk profile of the environment-related investment mandates. The ET 50 is FTSE's most liquid pure-play environmental index and the index for which we have a sufficiently long history to perform calculations of this kind. "Pure play" is defined by FTSE as companies where more than 50 percent of their business is



indices have fluctuated more than, and differently to, the wider markets. These companies also differ from other companies in the fund's equity benchmark index in terms of currency composition, geographical distribution and factor exposures.

#### *Effect on ownership share*

Other things being equal, increased investments in environmental-related companies will mean that ownership of these companies is higher than the fund's average ownership share in other companies. Our calculations show that an allocation of 50 billion kroner to pure-play environmental companies could push up the average holding by around 1.8 percentage points. If these investments concentrate on pure-play listed renewable energy companies, the average ownership share increases by 6.8 percentage points.<sup>6</sup>

These estimates of the effects on expected return, risk and ownership share assume that the entire 50 billion kroner is invested in listed equities. If part of the allocation is instead invested in green bonds, this would reduce the market risk and the relative risk.<sup>7</sup>

To sum up, the Bank's assessment is that a further increase in the interval for environment-related investment mandates would increase the fund's market risk. It would also increase the deviation to the benchmark index and in so the relative risk in the management of the fund. The increase in risk could be particularly great if these investments are concentrated to renewable energy stocks. It is uncertain whether the higher risk would provide a basis for a higher expected return.

#### Investment universe

The Ministry asked the Bank to assess the size and geographical distribution of the market for investments in renewable energy through listed equities and so-called "green" bonds. The market for such investments currently accounts for a relatively small part of the universe for new investments in renewable energy.<sup>8</sup> Most new investments are in the form of project finance. These projects are mainly unlisted infrastructure projects funded through a combination of equity and loans.

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environment-related. As with other environmental indices, the ET 50's composition has changed considerably over time. Only 26 percent of the companies in the index in the fourth quarter of 2007 were still in the index at the end of the second quarter of 2014. Estimates of risk will therefore depend on whether the calculations are based on current or historical index constituents. To calculate the relative risk from concentrating the mandates, we have used the FTSE ET 50 Renewable & Alternative Energy sub-index. See the more detailed description in the enclosure.

<sup>6</sup> The calculations are based on the market value of the fund at the end of June 2014 and assume that an overweight is established by investing the 50 billion kroner in a market-weighted portfolio identical to the FTSE ET 100 index and the FTSE ET 100 Renewable & Alternative Energy sub-index. Like the FTSE ET 50, the FTSE ET 100 is a pure-play index, but it covers more companies. Limited access to historical data means that we have not been able to use this somewhat broader index (ET 100) for the estimates of risk.

<sup>7</sup> See the enclosure for a discussion of the different types of green bond. The assumption that investments in green bonds help reduce market risk rests on an assumption that these investments are concentrated on green bonds of high credit quality.

<sup>8</sup> According to data from Bloomberg New Energy Finance, around 5 percent of new capital for renewable investments comes from the listed equity market. See <http://about.bnef.com/press-releases/global-trends-renewable-energy-investment-2014> (September 2014).



### *Listed equities*

One way of defining the investment universe is to use an environmental index from one of the index suppliers. FTSE currently produces both a narrow, technology-focused index (FTSE ET) and a somewhat broader index (FTSE EO). Only companies with more than 50 percent of their business in environment-related areas are included in the narrow index, while the broader index covers companies with more than 20 percent of their business in environment-related areas. Both of these indices have sub-indices for the Renewable & Alternative Energy segment. At the end of June 2014, there were 26 companies with a combined market value of 64 billion dollars in the FTSE ET 100 Renewable & Alternative Energy sub-index, and 92 companies with a combined market value of 236 billion dollars in the FTSE EO Renewable & Alternative Energy sub-index. By way of comparison, the FTSE Global All-Cap index was valued at close to 44,000 billion dollars on the same date.

In the enclosure, we compare FTSE's environmental indices with equivalent products from other index suppliers. Common to many of these indices are large changes in their composition over time. These changes reflect the underlying dynamics and relatively high risk in these segments. New companies are formed, established companies restructure (merge/demerge), and others go under. The definition of the indices, in the form of a requirement for a minimum percentage of a company's business to be environment-related, has also led to companies moving in and out of the index. Our review also reveals that index suppliers exercise considerable discretion in the construction of the indices, and that there is no broad consensus on this use of discretion.<sup>9</sup> Only 19 percent of the stocks in FTSE's pure-play environmental index are also included in MSCI's equivalent product. FTSE states that the index has been developed to be used for derivatives, tracker funds and exchange-traded funds. These users may have very different needs than a large, long-term investor.

### *Green bonds*

There is no universally accepted definition of green bonds. In the enclosure, we examine two green bond indices, one from S&P and one from Barclays. While the S&P index classifies a bond as green if it is marketed as one, Barclays carries out a special evaluation in conjunction with MSCI. Barclays' criteria seem to be close to the so-called Green Bond Principles.<sup>10</sup> These principles defines a variety of bond types as green, from bonds issued by institutions like the World Bank with a triple-A credit rating to bonds without a credit rating issued to fund, say, the construction of a wind farm.

As there is no universally accepted definition of the term, it is also difficult to assess the size and currency composition of the market for green bonds. According to estimates by Bloomberg, green bonds worth more than 40 billion dollars were outstanding in mid-

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<sup>9</sup> There are also some listed companies that are not included in any of these indices. One example is so-called "YieldCos". A YieldCo is a listed company set up to own physical installations that generate stable, contractually agreed cash flows. This ownership form is widely used in renewable energy and has clear parallels with listed real estate funds (REITs) and listed infrastructure funds (MLPs). Investments in such entities can be assumed to have different return and risk characteristics to investments in technology-focused companies.

<sup>10</sup> The Green Bond Principles are a voluntary market standard for green bonds developed by commercial players active in the green bond market. See, for example, <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles>.



September 2014. These were issued primarily in euros and dollars, but with a not insignificant fraction in Swedish kronor for historical reasons.<sup>11</sup>

The market for green bonds is expanding rapidly but is still small in comparison to the overall bond market.<sup>12</sup> On the investor side, the segment is dominated by institutions buying the bonds with the aim of holding them to maturity. This may mean that green bonds are less available in the secondary market, and that opportunities for new investments may be limited to issues of new bonds. The proportion of bonds in the fund's environment-related mandates in the early years will therefore be relatively modest.

Our review of the investment universe for renewable energy shows that investment opportunities lie mainly outside the fund's investment universe as it is currently defined. The market for listed renewable energy stocks and green bonds is small. The environmental indices that are available reflect choices made by the index suppliers and do not cover all of the opportunities around.

#### Costs

The Bank assumes that a relatively large proportion of the capital allocated to the environment-related mandates will be managed externally. This means that their management will be more expensive than the management of other capital in the fund, cf. our letter of 12 March 2014 where historical management costs for the external environment-related mandates were estimated to average around 80 basis points. Transaction costs will depend on the size and profile of the mandates. Increased investment in small, illiquid companies could result in somewhat higher transaction costs than are normal for the fund.

#### Potential secondary effects

The Ministry asked the Bank to comment on whether the fund's investments in renewable energy companies could impact on these companies' cost and/or supply of capital. In the Bank's opinion, there is little reason to expect an increase in the fund's investments in renewable energy to have major effects on companies' capital costs as long as these investments are made in well-functioning, liquid markets where the price of the share or bond reflects all available information. For example, we have not been able to detect any systematic differences in the pricing of comparable green and non-green bonds from the same issuer.<sup>13</sup>

The Bank's investments in listed equities will mainly be in companies that are already listed and will not therefore provide them with new capital. It is also our experience that listed renewable energy companies currently have neither greater nor lesser problems sourcing

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<sup>11</sup> Swedish bank SEB was an early pioneer of green bonds and still plays a leading role in this market. As a result, a relatively large proportion of these bonds are issued in Swedish kronor.

<sup>12</sup> The market value of the Barclays Global Aggregate index at the end of September 2013 was around 44,000 billion dollars.

<sup>13</sup> In the enclosure, we compare the pricing of bonds issued by France's EDF as an illustration. An issuer's motives for issuing a green bond rather than an ordinary bond appear in the first instance to be related to the possibility of attracting a broader investor base.



new capital than comparable companies in other sectors. When it comes to the Bank's investments in green bonds, these will to a greater extent be in the primary market and so represent new capital. Whether this capital supplements or replaces other types of bonds is uncertain.

If the fund's investments in listed renewable energy stocks and green bonds are significant, and other investors choose to follow suit, this could eventually lead to segmentation of the market. Such segmentation could give grounds to expect a lower cost of capital for these companies and a lower expected return on investments in such stocks and bonds.<sup>14</sup>

The Ministry asked for the Bank's comments or views on the measurement and reporting of any contributions to the environment from the environment-related investment mandates. The Bank's assessment is that such contributions are difficult to gauge, and that it is a challenge to isolate the effect of the Bank's increased investments. The companies and projects we invest in will make varying positive contributions to the environment, whether directly through reduced carbon emissions or more indirectly through the development of new technology.

The environment-related investment mandates mean that the Bank will invest more in a small part of the market. As stated in the strategic plan for Norges Bank Investment Management, we aim to report on the environment-related investment mandates as a separate allocation and specify the risk and return separately.

Yours faithfully

Øystein Olsen

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Enclosure

*Environmental Indices – Risk Assessment*

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<sup>14</sup> See Hong H. and M. Kacperczyk (2009), *The price of sin: The effect of social norms on markets*. This article discusses how the inability of some investors to invest in certain listed companies due to social norms impacts on these companies' cost of capital and expected return. Investors not subject to the same social norms can expect a higher return on their investments.